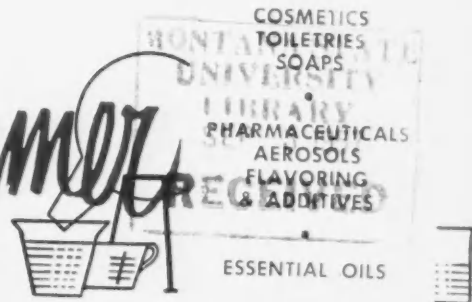


American Perfumer

AND AROMATICS



AUGUST 1957

THE MAGAZINE OF TASTE AND SCENT

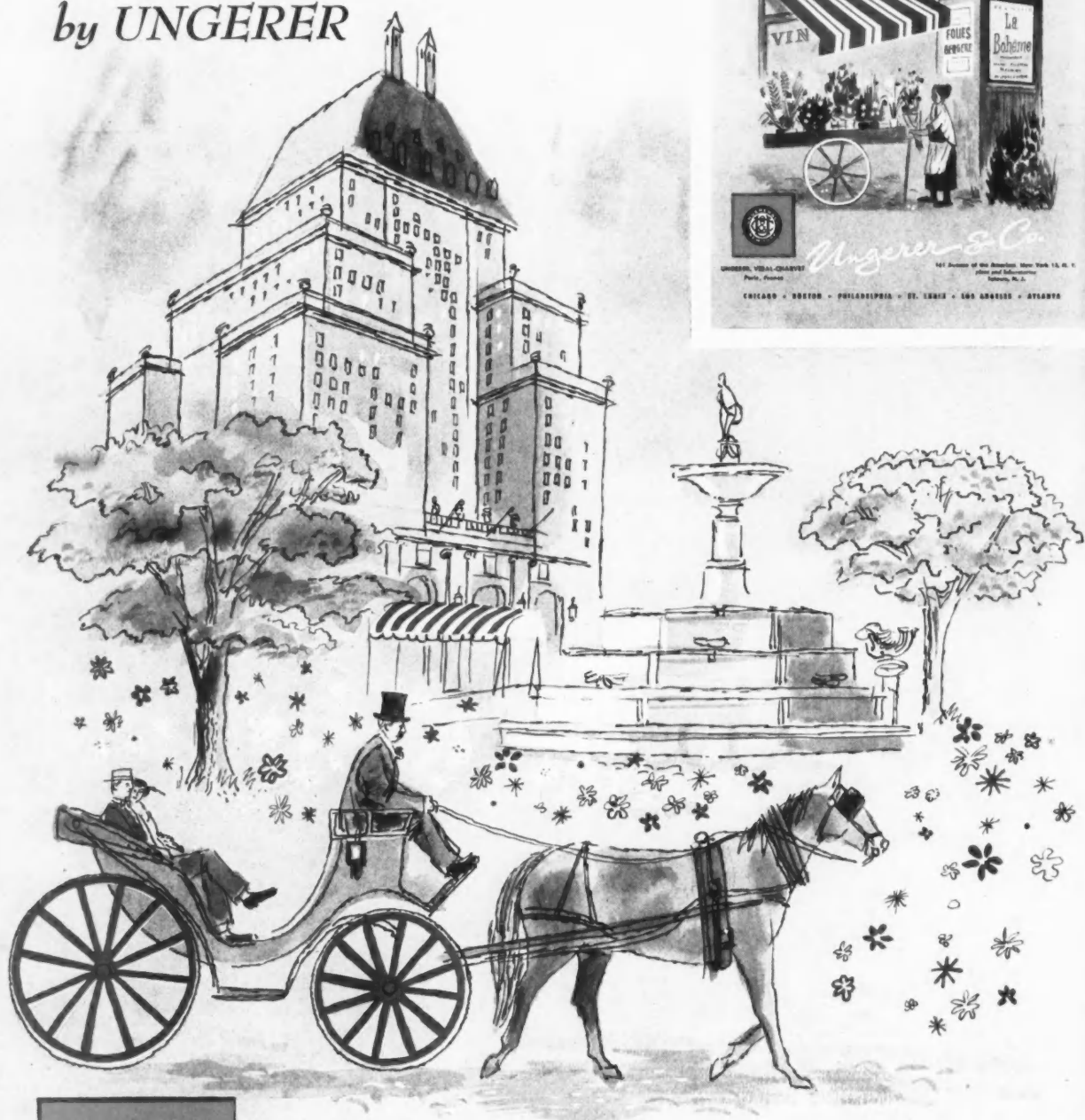


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COVER: Monument of Joan of Arc in Joan of Arc Park, Quebec, Canada. Courtesy Province of Quebec Tourist Bureau.

VOL. 70, NO. 2

AUGUST, 1957

American Perfumer AND AROMATICS



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NOW READY...

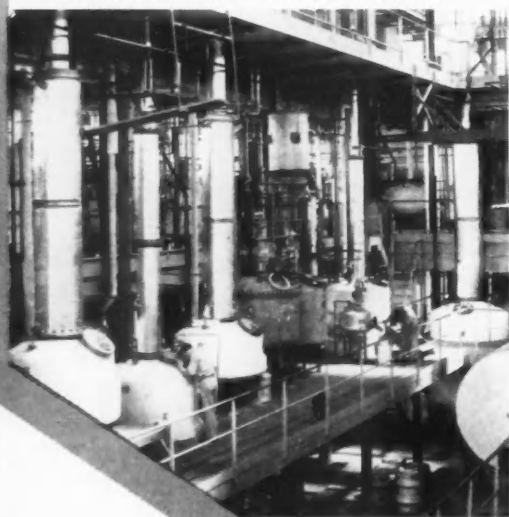
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Part of the still area in the General Process Building.



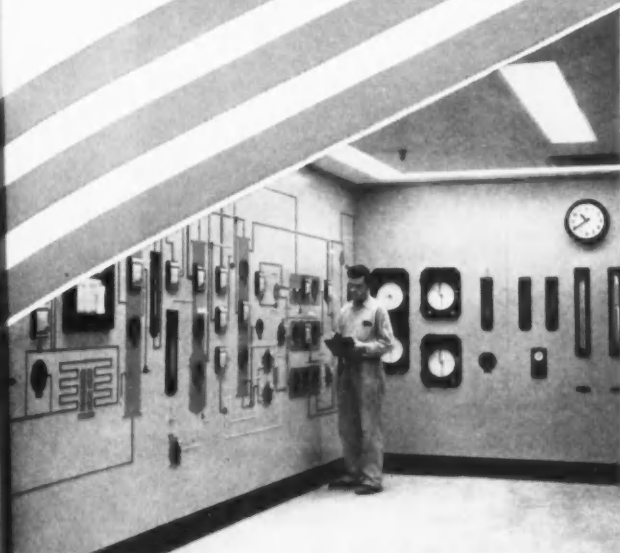
No longer need the perfume designer or manufacturer be subject to the esthetic or economic uncertainties of natural sources for many of the most important basic materials. Years of intensive research by Hoffmann-La Roche have resulted in the development of completely pure chemical substances which will now be in constant supply without speculation and wide fluctuation in prices. Unvarying purity—from pound to pound, from ton to ton—is assured by the process itself as well as by the large, new plant designed and built to fit this process.

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Pure nerolidol. Light balsamic odor. Excellent fixative. Blends well with any perfume compound.

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principal essential oil distributors*

Processing of 'Roche' Aromatics progresses through these three newly completed buildings at Roche Park. In the foreground is the General Process Building, next the Diketene Building, and (to the left) the Ethynylation Building.

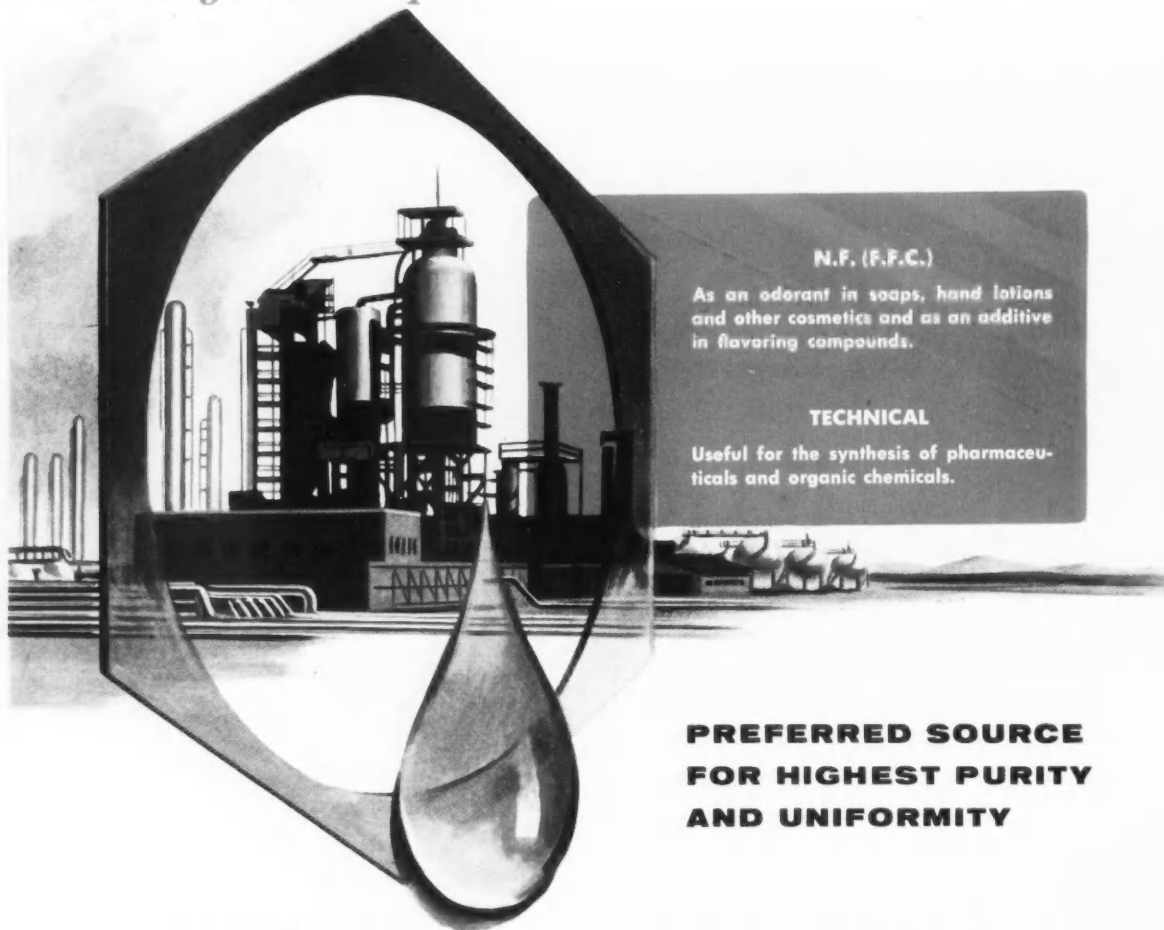


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2. Myvacet Distilled Acetylated Monoglycerides, Type 5-00



3. Myverol Distilled Monoglycerides, Type 18-05 (Free-flowing beads)

These are keys to "newness" in cosmetics



4. Myverol Distilled Monoglycerides, Type 18-40

Monoglycerides are not new. "Glyceryl monostearate" has been used by cosmetic formulators for years in making water-in-oil emulsions.

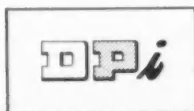
But a monoglyceride that's over 90% mono-ester is something so different that it can give a new direction to your products. We make it by molecular distillation to produce a uniform, stable, bland emulsifier that's non-ionic, neutral, and contains no residual soaps or catalysts—meets N.F. standards, of course. We call it *Myverol® Distilled Monoglycerides*. Try it in creams, lotions, lipsticks, ointments and other products based on water-in-oil emulsions. Its very purity is what gives it a unique behavior.

We make *Myverol Distilled Monoglycerides* in a number of types that are being used in cosmetics. Often, combinations of types can give you close control of viscosity and consistency.

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MINUTE NEWS . . .

Ritchie Sues Chesebrough-Ponds for 'imitating' Brylcream

Suit has been brought in the Federal Court for the Southern district of New York by Harold F. Ritchie Inc. manufacturer of Brylcream hair dressing charging Chesebrough-Pond's with trade mark infringement and unfair competition in the marketing of its Valcream hair dressing. The complaint alleges that Chesebrough-Pond's copied the format and appearance of Ritchie's tubes and individual cartons including the use and placement of a similar slogan and trademark.

Fourth Seminar of S. C. C. to be in Chicago, September 19-20

The fourth seminar of the Society of Cosmetic Chemists will take place in the Edgewater Beach Hotel, Chicago, Ill. September 19 and 20. The seminar will be held in conjunction with the celebration of the tenth anniversary of the Chicago chapter of the Society. Three topics will be presented: Biological Aspects of Skin and Hair Pigmentation; Laboratory Methods for Product Testing; and Microscopy. Plant trips have been organized for the afternoon of the last day of the seminar. Attendance at the seminar will be limited to 250. Reservations will be made on receipt of check or money order payable to the Society of Cosmetic Chemists, 2 East 63rd St., New York, 21, N. Y. Dr. Joseph Kalish is chairman of the seminar.

Ban on Coloring Oranges Removed by U. S. Court

An order of the Secretary of Health, Education and Welfare prohibiting the use of certified coal tar color FD & C red No. 32 for coloring oranges has been overturned by the U. S. Court of Appeals for the Fifth Circuit in New Orleans, La. The decision came as a result of a suit by the Florida Citrus Exchange and Frank R. Schell holder of patents on the process for coloring fruits who claimed that the Secretary had misconstrued the law as to his authority in the matter of food products that might be adulterated by poisonous substances.

Union Carbide Corp. Cited by FTC for Buying Visking

The Union Carbide Corp. has been charged by the Federal Trade Commission with violating the anti-merger law through its acquisition of the Visking Corp. one of its major customers. The complaint charged Union Carbide's size and financial resources might enable Visking the largest U. S. producer of plastic film to acquire control over the polyethylene business. Union Carbide is the largest producer of polyethylene resins used in making plastic film for packaging. Union Carbide's president, Morse G. Dial stated that before his company acquired Visking Corp. December 31, 1956 it made a thorough study and concluded that its action was legal.

Carter Products Profits Increased by Earnings from Royalties

Carter Products Inc. in a prospectus filed with the Securities and Exchange Commission showed sales have climbed from \$11,000,000 in 1953 to \$41,800,000 for the year ended March 30, 1957. Among the items contributing to the company's spectacular growth in recent years has been the income from royalties on patents which increased from \$90,000 in 1955 to \$2,300,000 in 1957. The income from the basic patent on pressurized shaving creams since the Supreme Court decision upholding Carter's claims over Colgate-Palmolive Co. and others who challenged them was a big factor in the increased earnings. In addition to making Carter's Little Liver Pills which have been under heavy attack by the Federal Trade Commission, the company makes Arrid deodorant, Rise shaving cream and Nair depilatories. It entered the pharmaceutical field two years ago with Miltown. The company was founded in 1880 and has been owned by Henry Hoyt and his family since 1900. Actual control of the company currently rests with the Hahdelan Corp. a holding company owned by Mr. Hoyt and his family. The company is preparing to list its shares on the New York Stock Exchange.

**B. T. Babbitt Co. Shake Up
Follows Heavy Loss Last Year**

B. T. Babbitt Co. has completed a shake up affecting management and advertising agencies following a net loss of \$520,612 last year. The new chief marketing man in the company is A. O. Samuels. Samuel Mendleson who has been president of Babbitt is now chairman of the board. No one has as yet been elected president. Mr. Samuels, now vice president of Babbitt was the founder and president of the Connecticut Chemical Research Corp. and president and general manager of the Bostwick division of the company which specialized in aerosols. Both companies were sold to Babbitt about a year ago. Harold Shincel is executive director of finance, accounting, general administration and factory operations. John Woooley, assistant vice president of Babbitt will be in charge of sales of all Babbitt grocery lines and Jack Schenberg, vice president of Bostwick Laboratories, will direct sales of all non grocery products. John E. Phillips will be advertising manager. Gilbert Plugge is assistant sales manager of Babbitt products. While over all Babbitt sales in 1956 were \$19,499,028 the largest in the history of the 101 year old company and \$2,000,000 over 1955 sales the net loss sustained was \$520,612. One of its products Bab-O was once the leading scouring cleanser in the United States. B. T. Babbitt Inc. was founded in 1836. In 1918 the stock was acquired by the Mendleson Corp. Since 1925 the company has acquired about a dozen companies. Under its new management plans have been made for expansion.

**Federal Trade Commission
Objects to TV Commercials**

Claiming that in its TV commercials other makes of hair shampoos are disparaged and that beauty conscious young girls are frightened, the Federal Trade Commission has filed a complaint against Lanolin Plus Inc. Chicago. The commission objects to statements which it says falsely represent that detergent shampoos will burn the hair of users. A commercial started with a model washing her hair and looking up startled at the words "Stop—don't burn your hair . . . with harsh detergent shampoos." In another commercial the announcer explains that detergent shampoos strip the hair of "vital, natural oils . . . leave it dry . . . brittle . . . dead looking . . . hard to manage." The Commission states that detergent shampoos will not burn the hair of beauty conscious young girls or the hair of any other individual. The hearing has been tentatively set for Sept. 11 in Washington.

**Chemical Industries Show in
New York December 2-6**

For the first time in six years the Exposition of Chemical Industries will again be held in New York, N. Y. in the Coliseum during the week of December 2-6. All four floors of the Coliseum will be used by over 500 exhibitors.

**Marketing Expense Takes One-
tenth of Sales Income Dollar**

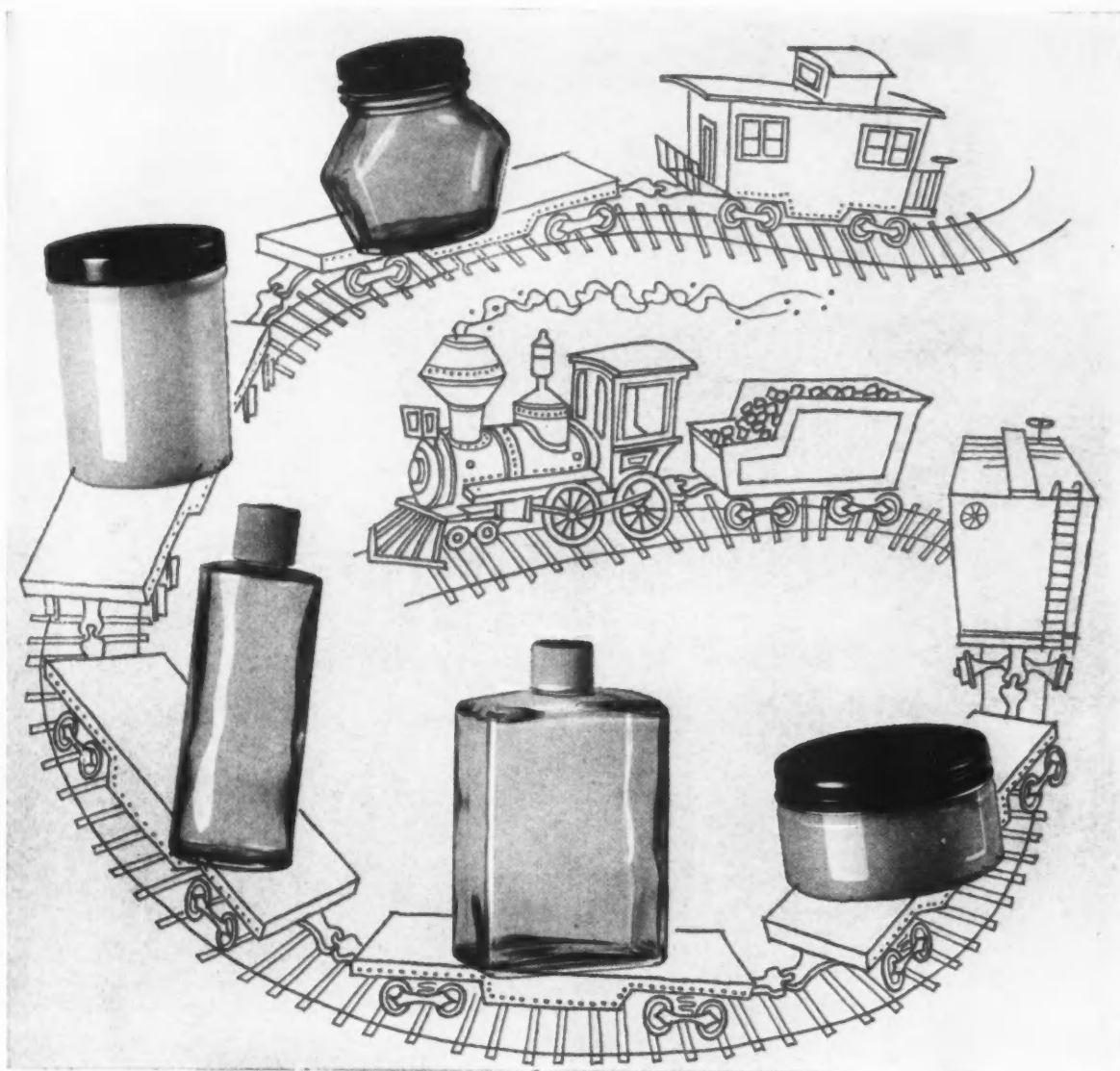
Marketing expenses take an average of one-tenth of the sales income dollar in 64 companies surveyed by the American Management Assn. This is a median figure. Actual expenditures ranged from 1 to 35%. Consumer goods manufacturers tend to spend more than manufacturers of industrial goods. Firms that gross less than 25 million dollars a year have a much higher ratio of selling expense to sales income than larger firms.

**85% of Cosmetics are Sold
By Self Service, Flint Reports**

About 85% of toiletries are sold by means of self service or self selection displays according to George T. Flint of Colgate-Palmolive Co. in an address before the District of Columbia Pharmaceutical Assn. In addition, in each classification of cosmetics, four top brands represent up to 85% of the total volume in each classification. He urged druggists to expose on a self service unit in a location that all customers will pass only the top volume brands. Then to allocate space to types of products in accordance with sales volume.

**Lanolin Plus Pays First
Dividend in its History**

Lanolin Plus Inc., Chicago, according to a statement by President Dr. Joseph Schultz, has declared the first dividend in its history, six cents a share plus one per cent stock. For the year ended June 30 sales were \$9,250,000. Net cash earnings after taxes were estimated at \$1,060,000. During the year the company paid off bank loans totalling \$1,430,642 and has made arrangements to pay \$100,000 on its long term indebtedness this month. Sales and profit increases are expected from three new products developed in its laboratories and two new products developed by State Pharmacal, the proprietary drug division.



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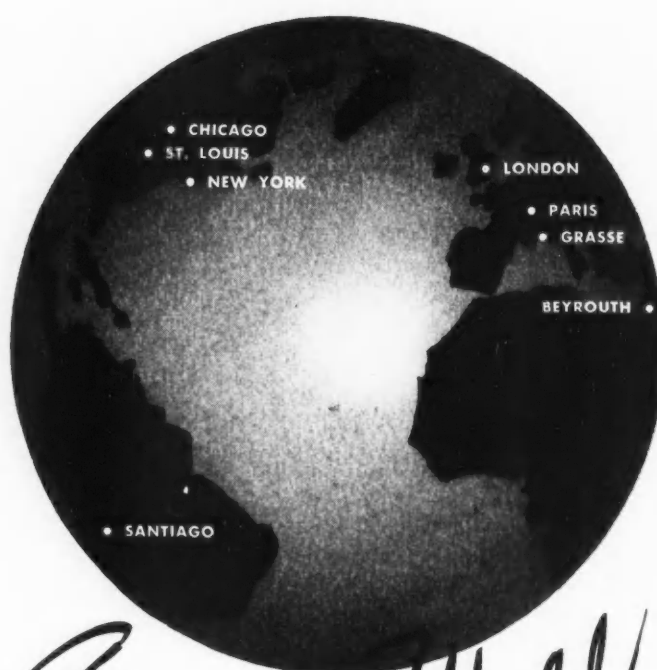
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AERO SCRIPTS



Jack Pickthall*

I was interested to read of the comparison between sulphoxide and 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal of acetaldehyde as synergists for pyrethrins and allethrin. Included in the article by Fales, Boldenstein and Beroza (Soap and Chemical Specialties Feb. 1957) were the tests made under Aerosol conditions. The basic formula employed was:—

Insecticide	0.4
Synergist	2.0
Deodorised Kerosene	6.6
Velsicol AR-50	6.0
Trichloromonofluoromethane	42.5
Dichlorodifluoromethane	42.5

In the case of pyrethrin, the knock-down and kill of house flies was similar for both synergists. When Allethrin was used, the Aerosol containing 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal was more effective than the one containing sulphoxide. These Aerosols were retested after one year's storage at room temperature and compared with freshly made products. Both of the year old products gave a better performance than the new samples. Other tests in low-pressure Aerosols were made and comparisons between 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal, piperonyl butoxide and sulphoxide drawn. 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal carried equal kill and greater knockdown. A similar performance (equal kill and greater knockdown) was found in medium-pressure Aerosols when the pyrethrin content of a formula was reduced by one half and 2% of 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal added. 2-(2-ethoxyethoxy) ethyl 3,4-methylenedioxyphenyl acetal seems a formidable sort of chemical, but considering it is an acetal of acetaldehyde, I am rather surprised that it is stable under the conditions which will exist in an Aerosol containing 42.5% of trichloromonofluoromethane. One would expect a breakdown of the acetal in the presence of traces of the hydrochloric acid which will be formed.

The possible use of a new chemical, methylchloroform or 111 trichloroethane, in Aerosols is indicated by Barber (Soap and Chemical Specialties Feb. 1957). It is offered in inhibited form under the trade name of "Chlorothene." It offers

use as a nonflammable solvent of low toxicity. To use the writers words—"a person may tolerate a concentration of up to 500 parts per million, eight hours per day, five days a week, for a working lifetime without adverse physiological effects." The fact that it will dissolve 6% of its weight of triethylene glycol is of interest where Air Purifiers are concerned. Its general properties as a solvent for accepted Aerosol constituents are good, e.g. 100 grams trichloroethane dissolve 41 grams D.D.T., 17.5 grams Lindane, 100 grams mineral hydrocarbon, 100 grams essential oils, 100 grams isopropyl alcohol. Its use as a vapor-pressure depressant with dichlorodifluoromethane is discussed. It is reported to have no adverse effects upon valves and valve parts.

The corrosion tests on metal containers make interesting reading. Tests were made on aluminum, copper, brass, iron, monel, stainless steel, tin and zinc. The tests were made in two ways, one where 0.01% of water was present and a second, on a 50/50 water Chlorothene basis. Little corrosion was recorded in any of the experiments using 0.01% of water. In the second series, aluminum and zinc were very definitely attacked. Iron also showed some fairly serious corrosion, whilst the remaining metals were only slightly affected. Of special interest to workers in the Aerosol field is the fact that the rate of hydrolysis of methylchloroform increases rapidly with temperature rise. For instance, 100 grams per year loses 0.365 grams due to hydrolysis (in glass, 3 mols water to 1 mol methylchloroform) at 70°F. but at 120°F. the loss is as high as 8.4 grams. This is worth remembering when trying out accelerated tests. On account of its ability to give relatively low pressures at high temperatures, it should be a welcome addition to the "propellant" range, but I should want to make sure that the water content of my preparation was very very low and I would be a little worried about my perfumes too.

Gas chromatography is in the news everywhere and its use in Aerosol Research and Development makes good reading (Root and Maury, Soap and Chemical Specialties, March 1957). Actually, it can prove a useful tool to investigate changes in perfumes under

major
world
source



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and
FATTY CHEMICALS
for
MODERN COSMETICS

"FLUILAN"

PURE LIQUID LANOLIN

LIGHTER IN COLOR

LESS ODOR

The analysis of a typical batch of Fluilan:

Unsaponifiable Matter %	42
Cholesterol in this Unsaponifiable %	23
Acidity as Oleic max %	2
Clouding Point °C	26
Iodine Value (Wijs)	27
Viscosity @ 40°C. (Redwood No. 1 secs)	2000
Viscosity @ 25°C. (Ford Cup No. 4 secs)	850
Saponification Value mgms.	95
Pour Point °C	20
Volatile Matter @ 100°C. %	0.3



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* Chief Chemist, Polak & Schwarz, England, Ltd.

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to development
and research on Aerosols**

Aerosol conditions. In the same issue, McCool discusses the effect of spray particle size in insecticides based on chlorinated terpene hydrocarbons. He concludes that there is an optimum in the region of 17 microns (mass median diameter) which is clearly affected by the selection of the valve. In fact, the valve factor seems to be relatively more important than reasonable changes in formulation. So Union Carbide Chemicals are to enter the propellant field; I wonder whether this means we shall see them either made or handled by their English connections.

Aeroscript Correction

At the time of writing, I have yet to see the June edition, but I have received a kind letter from Mr. Andrew H. Wolff, Vice-President of the Pegasus International Corporation, who was puzzled at a sentence in the *Aeroscript* appearing in that particular issue. He quotes from the journal:

"We have found that when a certain type of product is filled in lacquered metal, corrosion occurs when the filling has been made by the cold process are in contact with the metal."

The sentence actually sent to the editor read:

"We have found that when a certain type of product is filled in lacquered metal, corrosion occurs when the filling has been made by the cold process but not when pressure-filling has been employed. This is due to the fact that many lacquers crack at low temperatures and leave points where the contents are in contact with the metal."

As I pointed out to Mr. Wolff, the important point of my observation is that one can, under certain circumstances, prevent attack on metal by a given product. As is well known, one of the most important methods of prevention is by internally lacquering the container. When using pressure-filling at normal temperatures, there is no undue strain on the lacquer film and providing the lacquer will resist the attack of the contents, then no corrosion will arise. We have found, however, that the same formula filled by the cold method will often lead to corrosion and this, as I have said, is due to the fact that the lacquer either cracks or loses contact with the metal in some way, thereby leaving the way open for the contents to reach the metal.

Today's progressive American is one who wears last year's suit, drives this year's car and lives on next year's salary.—*Samuel Himmel*

"With the squeeze between rising costs and stepped-up competition, it is inevitable that business turn to the advertising agencies for new marketing ideas to open up fringe areas, or entirely new markets."—*Ernest A. Jones*.

Trade Literature

Two new Specifications give details of construction on single-seated and double-seated Honeywell Series 800 Diaphragm control Valves. Included are sizes, materials, plug characteristic curves, dimensions and cross-section drawing of each type. Request Specifications S810-11 and S810-12.

P. Robertet has issued a catalogue of Flower Oils, Butafior, Iso Butafior, Fixatives, Iris Products, Oak Moss Products, Resinoids, Essential Oils and Terpeneless and Superterpeneless oils.

The 16th edition of "Consulting Services" 1957, published by the Assn. of Consulting Chemists and Chemical Engineers, is off the press. Revised and streamlined, 136 pages, 6 x 9, for easy handling, \$1.00 per copy.

American Cyanamid Company has published a bulletin on the expanding field of surface active agents. The bulletin gives technical data on the seven types of "Aerosol" surface agents offered in commercial quantities by Cyanamid, including their use in basic formulations, data for testing effectiveness and information on storage and handling. Information on how surface active agents are used in the manufacture of many specialty products is included as suggestive of the uses to which the agents may be put.

Tests and other materials for use in personnel selection and training are described in the 1957 edition of the *Industrial Catalog* just issued by Science Research Associates. Personnel men will find this catalog helpful in locating materials to use in selecting employees, improving employee performance, and reducing turnover. Included in the catalog are tests of intelligence, interest, and personality, as well as tests for measuring aptitudes and skills. The catalog describes the uses of the SRA Employee Inventory, a morale survey which gives management an objective measure of the feelings employees have about their jobs and the company they work for. Copies of the catalog are available to industrial relations personnel and management executives upon request to Science Research Associates.

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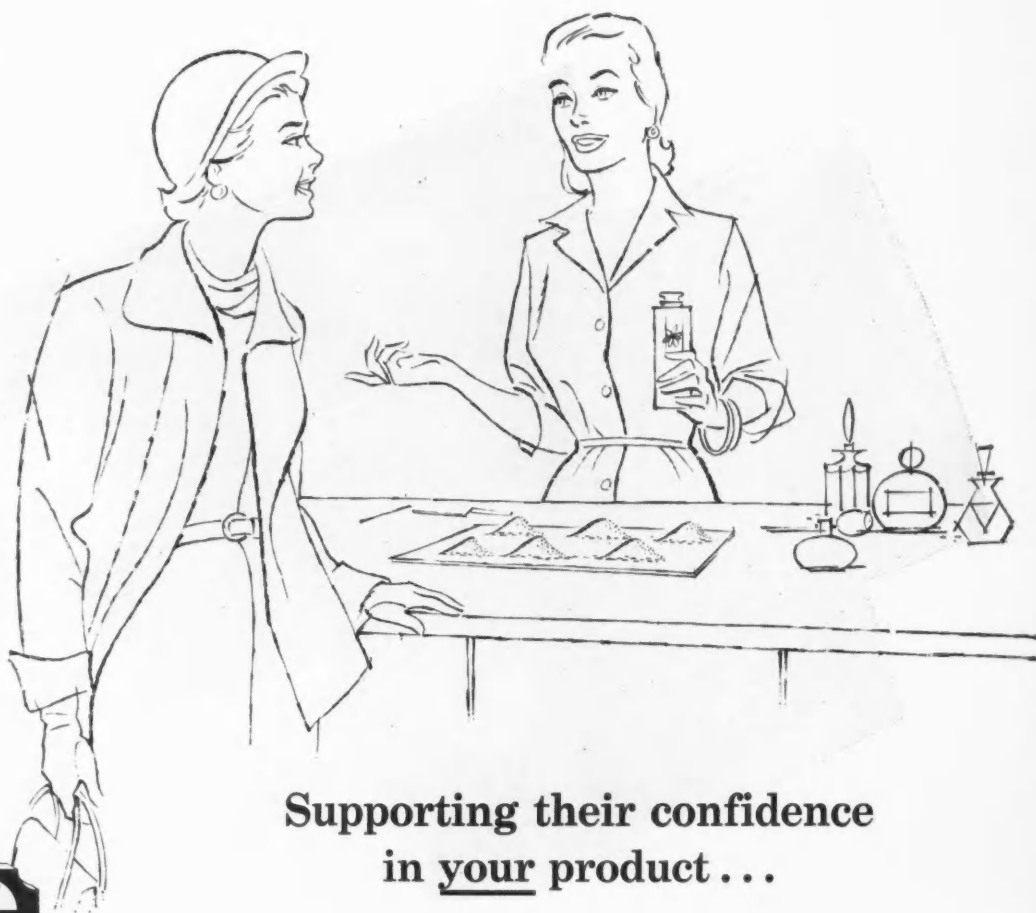
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QUESTIONS & ANSWERS

1248: HAIR STRAIGHTENING CREAM

Q. We would appreciate information regarding the essential formula for the manufacture of a hair straightening cream. We would also like the sources of supply for the products in the formula. F.H., Connecticut

A. We must warn you immediately that such a product has made a rather sad reputation for itself over the years, including the most recent based on thioglycolates. If you are still interested in pursuing the subject, we suggest you contact Evans Chemetics, Inc. This company is one of the principal suppliers of thioglycolate in the world and are well acquainted with the particular formulations and also know the liabilities as well. Kolar Laboratories of Chicago supply private label, hair straightening products.

1249: COLOR RESTORER

Q. Please give us a formula for making a hair color restorer that reputedly restores the natural color or the so-called progressive type of hair colorer. We notice that some of the preparations now on the market contain alcohol and some do not. Can you tell us what purpose the alcohol would serve? K.C., Missouri

A. The so-called color restorers do not restore color, as you know. They are progressive hair dyes and generally speaking, they are metallic hair dyes, most often based on lead acetate and sulfur. Usually these products contain from 1 to 2 per cent lead acetate and anywhere from 2 to 5 per cent of colloidal sulfur. From 1 to 5 per cent glycerin or some other polyol is added. Occasionally a surface active agent is included or possibly some alcohol. The general idea being that the product not dry out too fast and that it penetrate well. At best metallic hair dyes coat the hair on the outside with the corresponding sulfide, in this case, lead sulfide. Some of the early literature referred to the use of bismuth salts for this purpose, but to our knowledge, there are no commercial hair color restorers containing bismuth salts.

1250: SHAVE LOTION VISCOSITY

Q. We wish to add viscosity to a 30 per cent alcoholic after-shave lotion without causing stickiness or cloudiness. We have tried Stepan T-6-B and while this works well with water, alcohol spoils the viscosity. Any suggestion you may offer will be greatly appreciated. I.B.L., Wisconsin

A. The only way we think you are going to get viscosity to a 30 per cent alcoholic after-shave lotion is to use some kind of gum. Most gums do not tolerate this much alcohol, but it is just possible that one of the synthetic gums, such as methylcellulose in one form or another will be satisfactory. We suggest you write to The Dow Chemical Company, or get in touch with one of their branches in your area. They have a type of Methocel 60 HG, which is reputed to be compatible with organic solvents. We believe you will have better luck with this item than you had with the alkalolamide.

1251: DEHYDROACETIC ACID

Q. We are very much interested in the derivatives of acetic acid in the United States, one of which is dehydroacetic acid. In addition to its use as a fungicide and insecticide, we have been told that it finds some use in cosmetics. In Harry's book we find it listed among the sunburn and suntan preparations. Can you tell us whether it is used for that purpose in the United States and to what extent? P.E.H., New York

A. Dehydroacetic acids was once introduced by the Dow Chemical Company on a commercial scale as a preservative. The material is poorly soluble and its greatest usefulness came from the use of a sodium salt, properly adjusted. However, its spectrum of activity is quite narrow. From a publication we have seen recently, when you get to a pH of 5.5 and greater, its activity is pretty well lost. Our own tests on this score confirm this data to a certain extent. It is quite active against some types of microbes, and therefore, may have a place in drug and cosmetic practice for use in external preparations. The only available dehydroacetic acid in the U. S., at this time, to our knowledge, is material imported from Europe.

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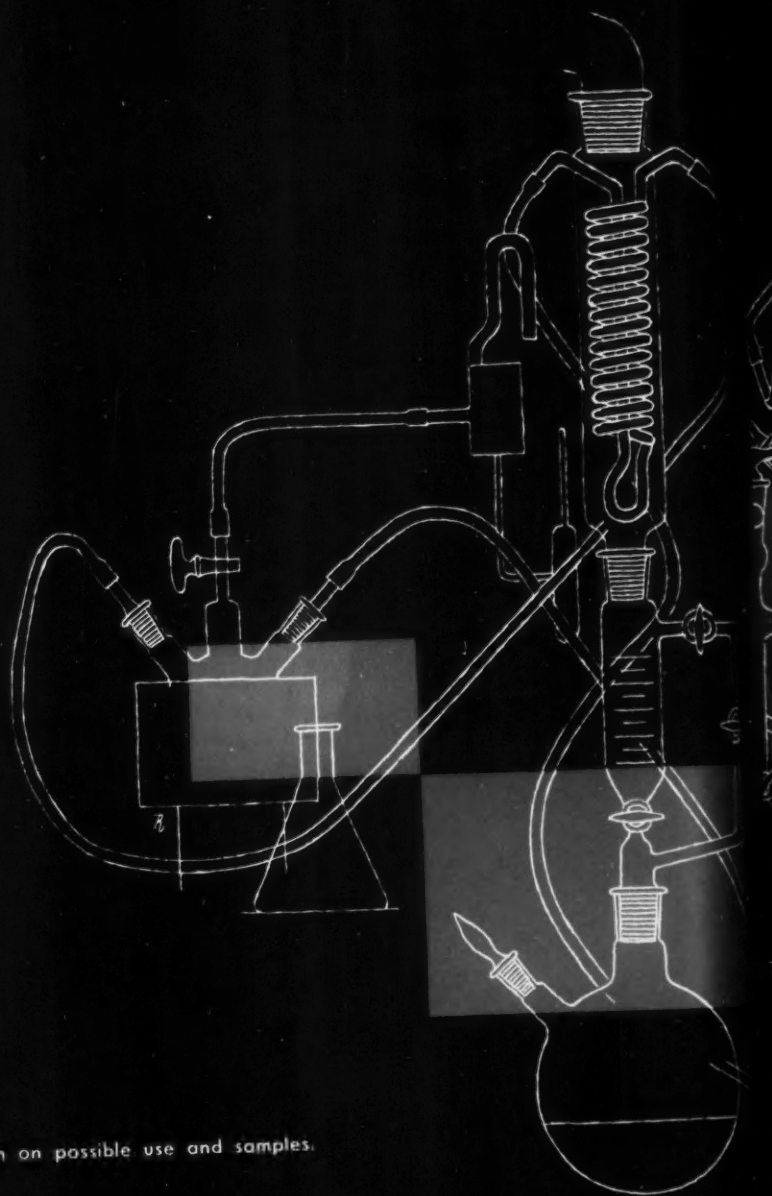
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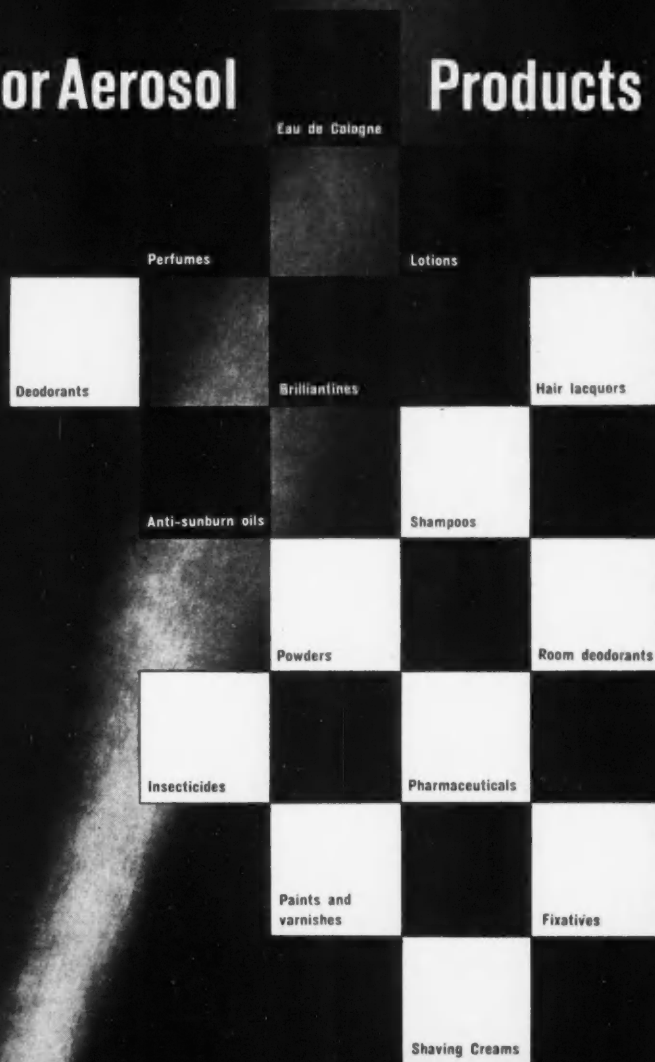
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Notes

One of the most interesting catalogs of cosmetic materials has just crossed my desk from a friend of long standing, Walter Mueller of Van Dyk & Co—It is a beautiful iridescent olive green plastic box full of 3 x 5 cards on his company's products as well as suggested formulas for using these materials—Thanks, Walter....The work being done at the University of Illinois on producing shrink-proof wool by feeding sheep sulfur is interesting indeed—wonder what relationship if any, there is (or was) to waving of hair following the spring dosing of sulfur and molasses, now a dying custom....Sheard, Cormia, Atkinson and Worthington have just reported on four cases of granulomatous reactions due to the use of a sodium zirconium lactate deodorant stick—three women and one man....Sams and Smith in J.A.M.A (July 13, 1957) report a case of contact dermatitis due to hydrocortisone ointment—further examination pinned the sensitivity on sodium lauryl sulfate....knowing that bees are influenced by color, has often made me wonder if odor had a similar effect. A bit of work just read, Danish in origin, ties the story all together....I just knew Jane Williams would be getting out another bound copy of Schimmel Briefs, and she did....Reactions on my Encyclopedia are starting to come in. So far, they are mostly good, but a number of dissatisfactions are in, too. The best way to get no complaints is to do nothing, I guess....Dr. Aalto of

Heyden has sent me some hexyl and heptyl parasepts to use in my "interference of nonionic emulsifiers with preservatives" work....In Paris I'll be giving a paper to show the effects of anionics, cationics and ampholytes on this interference, to be published by the official organ of the S. F. C....will also do a story on the S. C. C. visits to Paris, Geneva and London—if I am able.

Synthetic Pearl

So-called natural pearl essence made from fish scales apparently is OK for cosmetic use. But the synthetic material so often used in lacquers is sometimes based on lead and hence cannot be used. Since the composition of synthetic pearl material is secret, be sure of determining if your anticipated use is safe before going ahead.

This pearl effect in cosmetics is interesting. I recall writing about it twenty or more years ago in the American Perfumer, in reply to an article suggesting its use in a German trade journal, authored by Janistyn, as I remember it.

Cosmetic Chemists International

At 3:00 p.m., EDT, Saturday, July 27, some fifty members of the Society of Cosmetic Chemists and their wives (even two daughters) were en route to Paris, Geneva and London to give and hear scientific papers.

The Societe Francaise de Cosmologie, the Swiss Society of Cosmetic Chemists and the British Society of Cosmetic Chemists are

rolling out the Red Rug for them along with the British Society for Research on Ageing and the Toilet Preparations Federation Ltd.

The purpose of this joint series of meetings is to bring together the several societies to work out a closer relationship between them and to exchange scientific advances.

It will also give American cosmetic chemists a more universal understanding of cosmetics as the science and art are practiced in other countries than the U. S.

People will meet others who have been no more than names to them.

All in all, the cosmetic science is going to gain greatly from this group of seminars.

S. P. C. Year Book 1957

Freddy Wells has outdone himself in this year's edition of this annual publication. It is turning into an encyclopedia of valuable data on international toiletry practices with a dominant note on the U. K. There is much new material, though it may have appeared during the year in the regular issues of S. P. C. Here it is bound and all together.

While there is considerable material on surfactants or/and emulsifiers of one kind or another, Freddy apparently hasn't run into the five papers I have published on the "Interference of Nonionics with Preservatives." Spirit regulations, patent and trade mark laws and poisons list all are valuable to mention a few high spots.

Good job, Freddy! See you in Paris.

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Monoglyceride Gels

Any water holding gel made from cosmetically safe materials is always bound to be interesting. This time it is with a glyceryl monooleate. Water up to 50 per cent can be worked into the hot monoglyceride with simple agitation resulting in a paste varying in stiffness with the water content.

A particular molecularly distilled product was used in these tests.

The best way to make the gel is to add boiling water to monooleate heated to 98°C. Simple agitation does the rest.

Orange Oil Antioxidant

In comparing BHA and BHT for their antioxidant effect on orange oil, Gearhart, Stuckey and Sherwin find a slight edge in favor of BHA, using the active oxygen method, as reported in *Food Tech.*, 11, 260 (1957).

The antioxidant effect is manifested against *d. limonene*, so that other oils containing this terpene (such as lemon oil) may be benefited by adding BHA.

Trade Literature

The 1957 World Trade Data Yearbook has been published by Exporter's Digest. The Yearbook presents in chart form (60 pages) information on mail, telephone, radio and cable message rates and regulations; electric current; overseas buying agencies in the U.S.; listing of U.S. banks with foreign departments; U.S. firms who finance exports; Steamship and Airlines Directory, etc. It also contains the seventh annual survey conducted by Exporter's Digest of Credit Terms U.S. exporters are granting customers in leading world markets.

Roy A. Foulke, vice-president of Dun & Bradstreet has just published a booklet, "Twenty-Five Years of the 14 Important Ratios." This 83 page study, the latest of a series begun in 1931, contains ratios yardsticks which are widely used in the analysis of balance sheets and income statements by the managements of industrial and commercial businesses. Included in the study are updated financial and operating ratios for 78 lines of manufacturing, wholesaling and retailing. Single copies are free of charge and can be obtained by writing Dun & Bradstreet, Inc.



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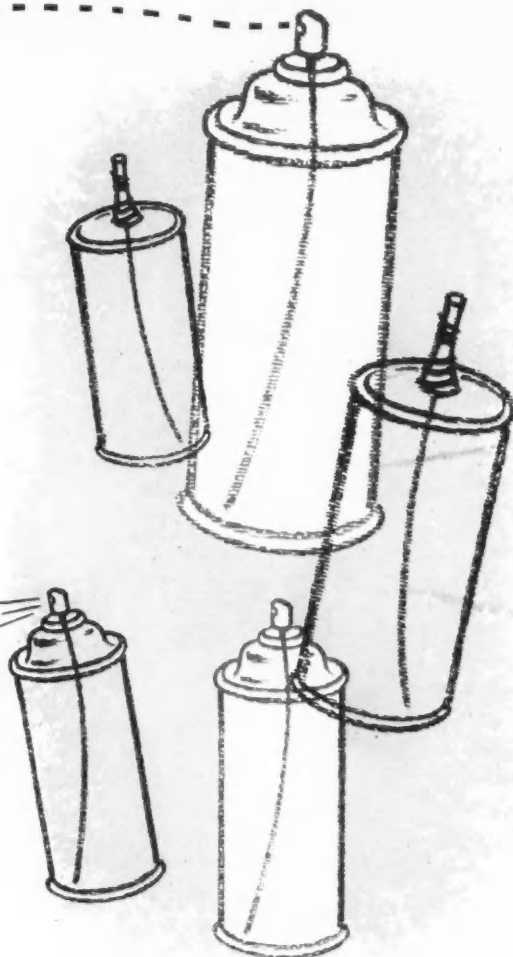
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Putting cosmetics in aerosols involves many technical considerations. The cosmetic base, the perfume, the propellant, the container, and the valve are only part of the problem. The manufacturer must be sure that each component is entirely compatible with the others. He must be absolutely positive that it remains that way until the customer throws the empty container away.

Van Dyk can help you aero-solve your problems. When your formula calls for ingredients that must be foolproof, use Van Dyk's raw materials. They undergo extensive aerosol testing to assure uniformity and efficiency for the product. Van Dyk's research staff will gladly assist you with formulations.



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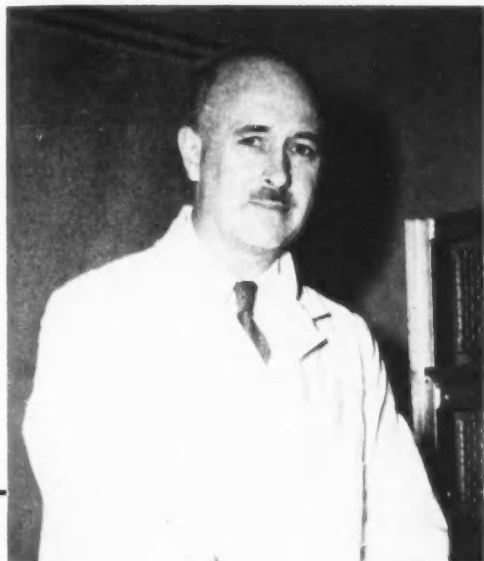
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LOS ANGELES

TORONTO



Changes IN THE Aging Skin

AMOS E. LIGHT*

As defined in the dictionary, skin is "the membranous external investment of an animal." Actually it has turned out to be an "investment" of inestimable value for the human animal and the study of ways and means of keeping the skin in good condition has become a very profitable investment for the drug and cosmetic industries.

A human being weighing 70 kg. has approximately 1.83 square meters of skin. This average value is obtained by raising one-tenth of the value of the weight to the two-thirds power (1). The skin weighs about 16 per cent of the body weight. In burns during mass casualties, the area of skin damage is most important in planning for the care of the patient especially in regard to fluid administration. Normally the skin prevents a large loss of moisture except in times of increased body heat during fever or activity at which times the sweat glands are called into action. It may be of value to remember the Rule of Nine where the area of each arm and head is 9 per cent of the total and the surface of each leg and each side of the trunk is 18 per cent of the total (2). The thickness of the skin usually measures between 2.5 mm. and 8 mm. and the different layers also vary in a similar manner (3). It has been recorded that an average strip of skin one inch square contains some 3,000,000 tissue cells, one yard of blood vessels, four yards of nerves with 25 sensory ends, some 400 or more sweat glands, and from 15 to 30 hair follicles with like numbers of sebaceous glands (4). The skin is an organ and uses all of the above structures to protect the body. The production of keratin is considered one of the skin's greatest achievements (5).

Usually it is extremely unwise to introduce a new term

to describe old events; however, after careful perusal of the literature it became apparent that no single word yet used could describe the act of substances passing through various layers of the skin. After considering many combinations of prefixes and suffixes the word "Persorption" evolved to amply describe this action. The cosmetic chemist is probably more interested in absorption, an example of which would be the stratum corneum swelling following the application of water, whereas the pharmaceutical chemist is concerned with persorption which indicates passage of material into the deeper sections of the dermis and possibly into the lymph or blood systems. In fact the cosmetic chemist may not desire to have the lower layers of the skin affected. Penetration of the stratum corneum by detergents to the area of living cells may be a major factor in the severity of some eczemas. Protective creams have been devised to prevent such penetration (6).

Penetration of the skin may be by solid matter causing trauma, or by energy such as heat and x-radiation. With the administration of heat the temperature of the skin rises, the rapidity of this rise depending on the thickness of the tissue; it is less rapid when the superficial tissue is thinner allowing deeper penetration and faster dissipation of the heat by the blood (7). The study of the passage of chemicals through the skin, persorption, offers a great challenge to research workers in the field of dermatology. Much information has been gained in the past few years but much more is needed to treat the various skin disorders prevalent today (8).

It would be out of place here to present all published data on skin structure and physiology (9) and the literature on percutaneous absorption (10). These subjects have been reviewed before as listed in the bibliography. In general it has been found that a substance with water and lipid solubility has a much better chance of passing

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through the skin than other types. The rate of penetration is related to the ether-water partition coefficient, and the barrier to be passed appears to be an aqueous phase separating two lipoidal layers. There are many exceptions to this so that each individual compound should be tested for persorption. Water itself has been studied for its persorption properties, but it has been found that the most important property of this substance is to keep the stratum corneum hydrated with resultant improvement in dry skin (11). The surface layer of epidermis usually contains only 10 per cent of moisture in the keratin as compared with 40 per cent in the deeper layers and 70 per cent below the stratum granulosum (12). The skin as a whole becomes a depot of water for the rest of the body in certain cases of electrolyte imbalance (13). It is possible that a trace of water may go through the membrane at the stratum lucidum boundary but the eccrine sweat glands and hair follicles are probably the main pathways for any slight passage of moisture through the skin. It is interesting to observe that the diameter of the eccrine sweat gland opening is only about 30 microns or less. This small opening will undoubtedly prevent particles having a large diameter from entering this gland. The much narrower tube spirals down into the skin with only a double layer of cells along its lining; this would facilitate persorption (14). The much larger hair follicle has a lining whose cells become more and more undifferentiated as it penetrates into the skin allowing easier passage of material. The sebaceous gland openings into the hair follicle likewise are points of entry especially for fat soluble substances. In certain regions such as in the armpits the apocrine glands also open into the hair follicles and offer additional pathways (15).

It is essential for good persorption to assure prolonged contact with the substance in an easily spread ointment base or lotion (16). Rubbing and pressure would certainly force more material into the skin openings. Washing the skin to remove sebum and other matter, including the "acid mantle" (17) that might interfere with the application, usually affords more rapid persorption. For deep fungal infection it is useful at times to remove the upper layers by abrasion (18) or with scotch tape (19) before administering the topical drug; or it may be necessary to soften the keratin layer with alkaline solutions, or with organic solvents. Breaking the sulfide linkages in the keratin layer with reducing agents may also prove useful (8). Low concentration of salicylic acid softens the outer structures while higher strengths damage the tissue (20). Damaged epidermal tissue increases passage by permitting material to enter the blood and lymph vessels of the dermis directly (21). During persorption tests on intact skin, therefore, the investigator must exercise utmost care in preventing skin damage during cleaning or shaving the skin. Damage also changes the negative charge on the outside of the skin which usually repels anions.

The methods of determining persorption merit consideration for by these means it is possible to compare drugs and drug vehicles, and obtain other pertinent data necessary to establish good therapeutic action. It is well to remember that experiments on laboratory animals do not always give the same results as are obtained with humans (22). Known amounts of ointments or solutions in enclosed containers or compresses (23) have been applied to the skin for various periods of time; the difference between the original and final amounts represents the amount going into the skin. However, this quantity may remain in the epidermis without exhibiting persorption, or a part will go into the skin orifices with immediate persorption, or produce a depot effect by liberating material gradually into the dermis. This

difference may also be determined by extraction, but again this need not indicate persorption. Excretion of inuncted material or its derivatives in feces, urine, or breath or identification in tissues or organs proves persorption. The depth of percutaneous penetration has recently been investigated by means of radioactive (24) and fluorescent (25) materials. By the former method autoradiograms give pictures of the tissues containing the test material at different depths, at various time intervals. Hydrocortisone appears to pass generally through the epidermis, and not preferentially through the hair follicles. However, radioactive chemicals with short wave emission may indicate a deeper penetration than actually obtained. The fluorescent method shows that oleic acid is very easily persorbed; it indicates that linoleates and oleates may be especially valuable for persorptive purposes. *In vitro* tests with isolated skin tissue may prove useful in certain instances (26).

The prevention of cutaneous disturbances has also been used to estimate percutaneous penetration. Thus, histamine solutions applied to the skin either directly or by iontophoresis, produce the usual response; however, antihistamine preparations when applied to the skin may interfere with or prevent this action (27). Incidentally, iontophoresis is an excellent method for enabling certain ions to pass the epidermal barrier. Usually it is more applicable with cations applied at the anode; it was used over fifty years ago for introducing the iodide ion into the neck for the successful treatment of deficiency goiter.

Histamine, because of its biological importance, has been widely tested for percutaneous absorption. The base will penetrate from most solutions and ointments, but it is such a potent drug that only very small quantities are needed to elicit vascular responses. The salts of histamine are less easily persorbed. An attempt was made to inunct "48-80" (28), a potent histamine liberator, into the skin of several species of animals. A water washable ointment containing 1 per cent of "48-80" was rubbed vigorously into the skin of the backs of a rabbit, rat, guinea pig and dog from which the hair had been removed with an electric clipper. No cutaneous effects or temperature changes were observed in any of the animals, and no drop in blood pressure was found in the dog. Later a 1 per cent aqueous solution was applied on the same regions with still no effects except for a slight blister on the dog, possibly due only to the rubbing. Administered intravenously, 25 to 50 micrograms of "48-80" will produce a 50 per cent reduction in the dog's blood pressure. Thus the above data indicate that a polymer (formaldehyde with N-methylhomoanisylamine) of large molecular weight (about 471 or more), will not rapidly pass the epidermal membrane barrier and reach the mast cells where much of the skin histamine is located.

In order to determine the persorption of chlorcyclizine hydrochloride from a water washable ointment[†] the amount of drug actually found in the blood was biologically measured (29). This was accomplished by taking blood samples from the inuncted dog at various time intervals and determining the inhibition of histamine induced contractions of the isolated guinea pig ileum following the addition of plasma samples to the tissue bath. During this procedure it was discovered that an appreciable amount of chlorcyclizine became bound in the plasma and did not exhibit full activity in this type of assay. Control samples of standards in plasma were thus made necessary in order to evaluate the actual amount passing through the skin and found in the blood.

[†] Supplied as "Perazil" brand Chlorcyclizine Hydrochloride Cream, Burroughs Wellcome & Co. (U.S.A.), Inc., Tuckahoe, N. Y.

Boric acid powders, solutions and ointments have been investigated but no persorption could be detected through normal skin, as determined by an increase of boron content in blood by chemical assay (30). The passage of cortisone through the skin of adrenalectomized mice has been measured by the eosinopenic response (31). Most vitamins have been found to penetrate the skin enough to relieve the various deficiency symptoms in rats when vigorous application and special ointments are used (32). With human skin, similar activities (33) have been reported and in one instance actual recovery of vitamin B-6 in the urine has been recorded (34). Nicotinic acid derivatives, used for peripheral vasodilation when applied locally, have been found to raise the blood level of the vitamin (35). Tetraethylpyrophosphate certainly passed through the skin when it almost caused the death of a child by its blocking action on the heart (36). In a high concentration, DDT exhibits toxicity when placed in contact with the skin especially when chlorinated solvents are present (37). Of the war gases, the mustard type at low concentration appears to penetrate uniformly through the epidermal barrier, whereas lewisite has been found more in the cellular lining of the hair follicles. Both have much less effect in cold weather (38). Local anesthetic action is also a unique but valuable way of observing the passage of compounds through the skin (39). A polyethylene glycol ointment base permits the dye, phenolsulfonphthalein, to pass through the skin much better than a petrolatum base (40).

Radioactive tracers are now being used to determine the amounts and the pathways of persorption. Mercuric chloride with radioactive mercury has been found to have no penetrative ability (41). On the other hand C^{14} hydrocortisone was easily followed through the skin and into the blood system by autoradiography (42). Sodium retention has also been measured following the application of fluorohydrocortisone lotion (43). Hair growth has been inhibited in rats by application of both cortisone and estrogens (44) but this does not necessarily indicate that persorption has taken place. However, in other tests, it was found that the sex hormones exhibited their respective actions on the rat, estradiol being catabolic and methyl testosterone anabolic (45). With humans, it has been reported that an estrogen lotion applied to male scalps has reduced the amount of falling hair (46). These examples could possibly involve persorption.

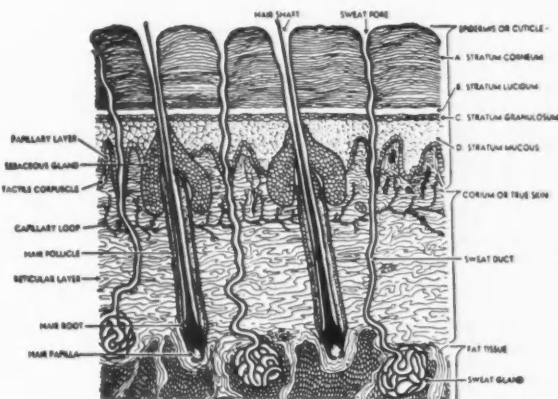
When the applied material has passed through the epidermal barrier its continued movement largely depends on the vascularity and circulation in the underlying tissues (47). This has been increased by the use of peripheral vascular dilators such as salicylic acid, nicotinic acid, benzedrine and their derivatives (48). Some of these may be administered orally or by inunction. Benzyl nicotinate has been shown to increase the rapidity with which S^{35} may be excreted in the urine following inunction (49). Besides blood flow, the size of the molecule may affect the passage of the material. The pore size of the membranes in the blood vessel walls as well as in the epidermis (50) may be smaller than the molecular volume of the substances. For instance, a pore diameter of 55 Å, will retain egg albumin (51). Hydrostatic pressure may also affect the passage (52).

In other aspects of persorption it has been found recently that the skin color may be controlled by topical application of certain chemicals. The monobenzyl ether of hydroquinone inhibits the oxidation of tyrosine so that melanin formation may be prevented (53). On the other hand, white skin patches of vitiligo may be made darker by using 8-methoxypsoralen along with sunlight. This

chemical stimulates tyrosinase activity in the cells of the lower layers of the epidermis (54). This suggests the study of enzymes in the skin which may possibly influence persorption. Acid phosphatase has been found in regions of keratin transition (55). Esterases have been reported in high concentration near the surface (56). Succinic dehydrogenase (57) and cytochrome oxidase have also been observed (58). Monamine oxidase may be responsible for the ammonia from sweat glands (59). Various aspects of this phase offer a wide field for future research work.

Age offers many problems in persorption (60). For instance, estrogenic ointments have been recorded to have a beneficial effect (61) on senile skin though a visible improvement has been questioned in one instance (62). There is some question as to whether the collagenous and elastic tissues change markedly with older age thus affecting persorption (63). Aging of protein, ground substance, hyaluronic acid, hyaluronidase, glycogen and other constituents must be further investigated (64). Observation of circulatory changes of both blood and lymph in the dermis along with oxidation studies will be of value in considering persorptive measures (65). The scalp (66) should be considered specifically, for it has peculiarities not found in other parts of the skin.

Since aging of skin does not necessarily correspond to chronological aging other factors such as skin exposure, nutrition (67), sensitivity and possibly stress (68) should be investigated. Poison ivy (69) and other similar skin reactions are only partly understood with respect to skin penetration and present many research problems. The action of lysergic acid diethylamine (70) on capillary resistance introduces serotonin inhibition for study. Cortisone and its derivatives may suppress vascularization through action on the ground substance and hyaluronic acid (71). Temperature, humidity, season and sex also probably contribute to differences in persorption (72). Skin-fold thickness measurements (73) may prove useful to predict persorption values.



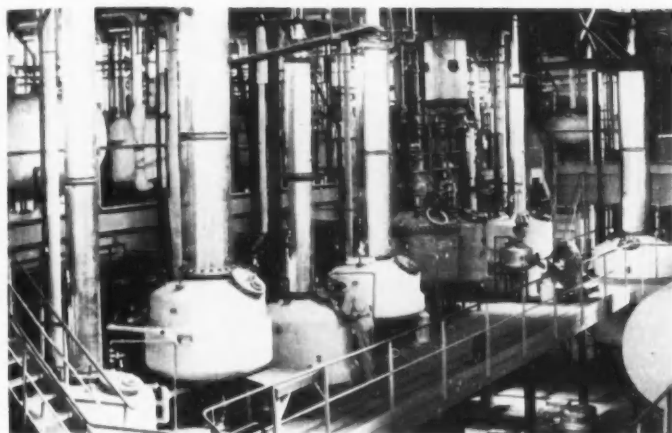
SUMMARY

Due to considerable discussion of terminology for the passage of materials through the skin, a new term "Persorption" has been proposed. Different degrees of persorption have been discussed, and various methods of determining persorption have been reviewed. Many factors such as fat and water solubility, contact with

the skin, environmental conditions, intactness, thickness and age of skin, and circulation of blood and lymph all need much additional research work to evaluate their effect on "Persorption."

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Some of the stills in the General Process building where aromatics are finished for perfumery.

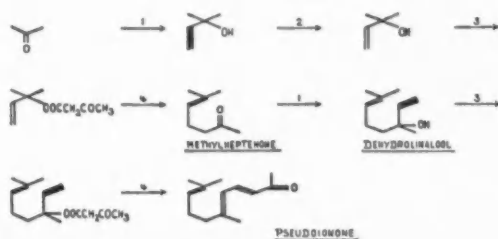


Philip E. Chaley

Synthetic Aromatics in Perfumery

After many years in the aromatic and perfume industry it has been given to Philip Chaley to witness one of the most important and recent developments that has taken place in this industry: namely the complete synthesis of Linalool, Ionones and related terpenic products without the use of natural intermediates. This is the story he is going to tell us. Philip Chaley is well known to our readers as he has frequently contributed to the American Perfumer and Aromatics. He came from his native France to the United States in 1922 as a Special Representative for L. Givaudan & Co., Geneva, Switzerland, and when Givaudan-Delawanna, Inc. was organized in 1926 he became Director of its Perfume laboratories. In 1928 he founded his own company, Ph. Chaley Inc., which he sold in 1953 to become a consultant perfumer.

SYNTHESIS OF PSEUDOIONONE FROM ACETONE



1. SODIUM ACETYLIDE IN LIQUID AMMONIA.
2. PARTIAL HYDROGENATION
3. CONDENSATION WITH DIETHER
4. PYROLYSIS

The study of nature is the basis of all progress accomplished by man in the field of science. In medicine the study of the human body and the function of its different organs gave us the clue to the diagnosis of our diseases. Pharmacology, based upon the study of the composition of plant extracts and the isolation of those constituents that were responsible for their curative properties, gave us many of the remedies we are using today for the treatment of disease.

The perfume industry is no exception and is narrowly related to the study of the natural essential oils extracted from plants by various methods. As recent an innovation as ultrasonics is being used to break up the plant cells to facilitate extraction.

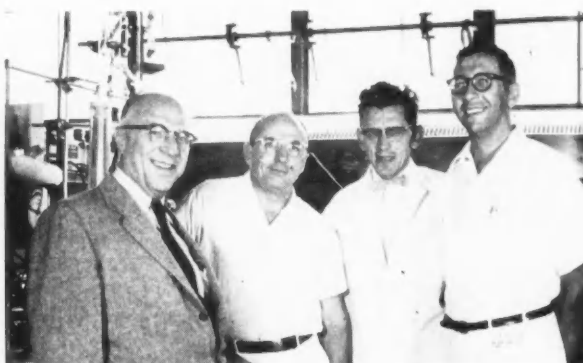
The modern science of perfumery originated relatively recently. It was in 1833 that Dumas started his systematic study of essential oils. Inspired by his work, the synthesis of benzaldehyde and benzyl derivatives was realized by Liebig and Wöhler in 1837; but it was not before Wallach, in 1854, originated his method of identifying chemicals by means of crystalline derivatives that the way was opened to establish their chemical constitution and their synthesis, thus a new aromatic chemical industry was born.

It followed the development of the chemical industry in other lines. In 1875 Tilden discovered pinene. Wallach, in 1888, established the structure of limonene. In 1893, Tiemann and Semmler discovered the ionones and Baur discovered his nitro musks. Later Perkin, in England, gave us coumarin and cinnamic aldehyde; Bouveault, Blanc, Barbier, in France, and others contributed to establish the constitution of citronellol, geraniol, rhodinol, linalool, etc. Bouveault and Blanc gave us a basic process for the manufacture of phenylethyl alcohol, an important constituent of the rose odor. From then on discoveries in this field came so fast that it is not possible to mention them all at this time.

What could be considered surprising was the fact



A corner in the huge Hoffman-LaRoche Inc. plant in Nutley, N. J. Foreground, General Process building; Center, Diketene building; on hill, Ethynylation building.



Dr. Alfred Ofner with part of his team of many chemists and chemical engineers who developed the synthesis. Left to right: Dr. Alfred Ofner, Dr. G. Chase, Dr. J. Surmatis and Dr. W. Kimmel.

that only the benzene compounds were made by complete synthesis. Terpenic materials were isolated from their natural sources and practically no attempt was made to manufacture them synthetically. This probably is due to the fact that labor was cheap in the countries from which these materials originated and were produced, and the quantity used did not guarantee a sufficient demand to pay for the amount of research involved.

The first twenty-five years of this century gave us a number of very interesting aromatic chemicals such as hydroxy citronellal, cyclamen aldehyde, and amylcinnamic aldehyde, to name a few. It was also at the end of this period that Ruzicka synthesized the sesquiterpenic alcohols nerolidol and farnesol. This work was of fundamental importance and expanded our knowledge of the chemistry of sesquiterpenes.

In the second quarter of this century Ruzicka and his co-workers gave us the macrocyclic musks. This was an important contribution not only to the perfume industry but to the organic industry as a whole. Similarly, Carothers, whose work on polyesters led to the development of nylon, discovered a new method of making cyclic macro molecules having a musk odor.

This period also marks the discovery of the structure of jasmone by Treff and Werner and the constitution of violet leaf alcohol and aldehyde by Ruzicka. Also the final elucidation of the structure and synthesis of irone was realized by Naves and Ruzicka.

Many chemists and many firms have contributed to the development of very important products in our industry during this period. Unfortunately the scope of this article does not make it possible to name them all.

With the past behind us, let us look at what is ahead in the field of the aromatic chemical industry. The synthesis of terpene aromatic chemicals has been somewhat neglected, as we have seen, to the profit of the benzene derivatives. Terpenic chemicals were obtained up to now mostly from essential oils. We had to grow citronella in order to get citronellal and make citronellol and hydroxy citronellal; lemongrass, to get citral to manufacture ionones, etc. Now a solution of this problem is opened to us by a new synthesis of terpenic aromatics that, for convenience, we will call terpenoids. This will liberate us progressively from having to reckon on crops which are subject to the vagaries of the weather and the prey of speculation. We can now obtain terpenoids by complete synthesis on a commercial scale, uniform in quality and in any quantity we desire.

It all came with the synthesis of vitamin A. After extensive research by a team of chemists under the

direction of Dr. Isler of Hoffmann-La Roche & Co. Ltd. of Basle, Switzerland, a synthesis of vitamin A

Dr. Alfred Ofner
Head of the Technical Development Dept.
Hoffmann-La Roche, Inc.

Born in Zurich, Switzerland, in 1901, Alfred Ofner attended the Polytechnic High School there and also the University of Zurich where, at the age of twenty-two, he obtained his Ph.D. under Prof. Paul Karrer (Nobel prize 1937). After graduation, he worked at the University for a year and a half as an assistant to Prof. Karrer. It was there that he became familiar with the terpene field in general and citral in particular.

In 1925 he went to work for Givaudan in Geneva where he worked on aromatics and essential oils with the Research and Production Staff. While there, he developed a process for the manufacture of levo-menthol using citronella oils from Java. In June 1941 he was sent to the United States by Givaudan to set up his menthol process in Delawanna.

With the advent of war, citronella oil became practically unobtainable, and the process was shut down. This taught him one very important lesson: never to depend too much on natural sources of raw materials when setting up a process; always try for the synthetic approach whenever possible.

In 1944 he joined Hoffmann-La Roche, Inc. as head of the newly formed Technical Development Department under Dr. Frey. From a very modest beginning with a staff of two people, the department has grown to where it now numbers about one hundred people, among them a staff of young chemists, chemical engineers, and engineers. While at Roche, he has worked on such projects as vitamin C, vitamin B₆, vitamin E, vitamin A, and now the aromatic chemical project, which is a natural outcropping of the vitamin A process.

Dr. Ofner is a member of: American Chemical Society, American Institute of Chemical Engineers, American Institute of Chemists, Fellow of the Society of Chemical Industry (London) and the Swiss Chemical Society. He speaks three languages fluently. His hobbies include woodworking, painting, and swimming.

was accomplished, using as its starting point beta ionone. But beta ionone in turn was made from citral that had to be extracted from the oil of lemongrass. The difficulty of obtaining lemongrass, at a fixed price and of uniform quality in the quantities necessary to produce vitamin A, decided the management of Hoffmann-La Roche to undertake the necessary program of research to accomplish the synthesis of beta-ionone.

Under the necessity of acting quickly to get the jump on possible competition, a research team of scientists, under the direction of Dr. Alfred Ofner, was organized. The unusual reactions from which this process was developed necessitated the use of experts in many fields and small plant procedure, to be enlarged later on, had to be forgotten, as being too expensive and too slow. So today, thanks to vitamin A, synthetic terpenic oils and derivatives such as linalool and its esters, nerolidol and its esters, ionones, irones, geranyl acetone, can be produced economically and of a quality that proves superior to the product made from natural sources.

Natural linalool is always tainted by objectionable by-odors, due to other constituents of oil of bois de rose, which are not completely eliminated in the commercial products. In the synthetic manufacture of linalool by Roche's patented process, only traces of dihydrolinalool, which has as fine an odor as linalool itself, can be present, which explains its olfactive purity. The linalyl acetate manufactured by a special Roche process is of a purity that has never been achieved before, as terpineol and other impurities that are formed in the process of acetylating linalool cannot be formed in the new process. The initial Roche process reaction for linalool starts with acetylene and acetone reacted in liquid ammonia to obtain methyl butynol, which is then transformed by selective hydrogenation into methyl butenol. The third step consists in reacting methyl butenol with diketene to form methyl heptenone from which dehydrolinalool is obtained. The process, as we can see, presented many difficult technical problems, mainly due to the nature of the reactants, but they were all solved to satisfaction by the excellent teamwork of Roche's engineers and chemists.

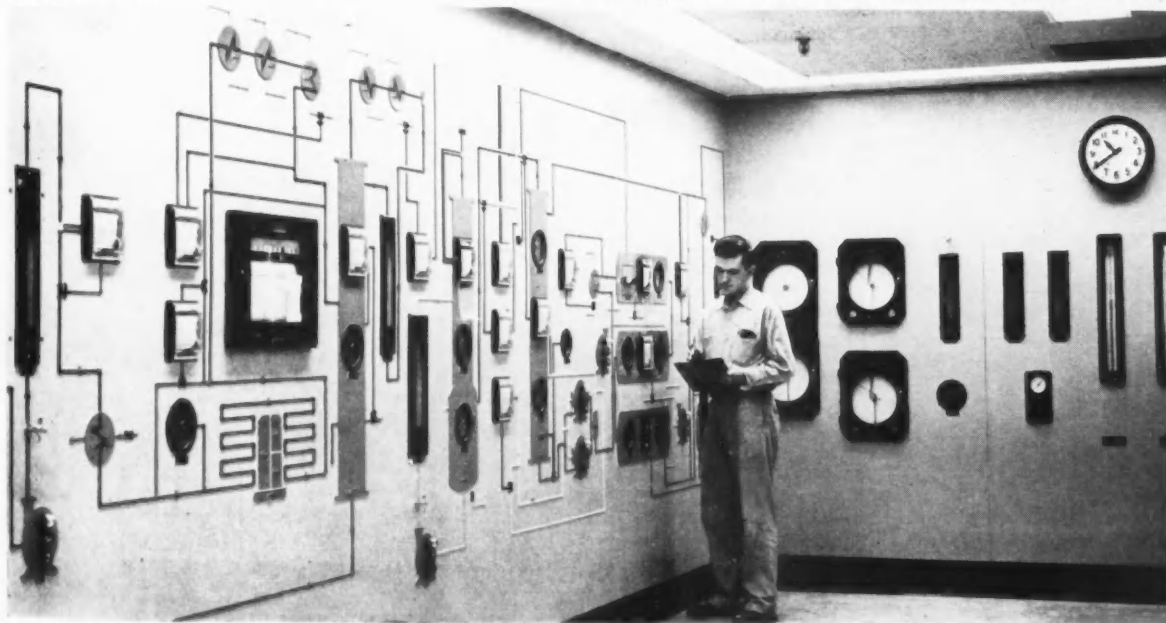


Marshall Bennett, in charge of organoleptic control.

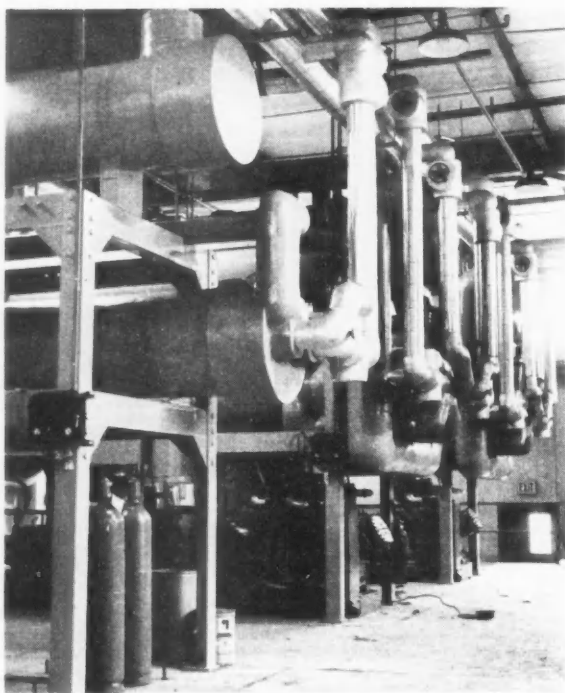
This basic synthesis is extremely important as it opens the way to the preparation of many terpenoid aromatics. This writer has examined many new aromatics of the linalool, ionones and irone family and found some of them of great prospective interest to perfumers.

Among the new products brought about by the Roche's synthesis are nerolidol and geranyl acetone, which products are not very well known by perfumers.

Nerolidol is a sesquiterpenic alcohol that is present in a great number of essential oils such as neroli,



Flow panel for the continuous process in the manufacture of diketene.



Large refrigeration units with compressors used in the newly developed process.

balsam Peru, ylang ylang, cabreuva, etc. It is an excellent natural fixative and this is the function that it plays in essential oils. Both nerolidol and farnesol are so similar in odor that one can replace the other in formulation. The main reason why nerolidol has not yet received the attention it deserves from perfumers is its high price. Now nerolidol can find its place in many compounds, its odor is rather neutral and blends well into practically any perfume compound.

The esters of nerolidol are particularly interesting in perfumery and have received so far no application, as they were not available commercially. Nerolidyl formate, acetate and isobutyrate have been manufactured by Roche on a laboratory scale and will be available commercially in the very near future.

Nerolidyl formate is fairly stable and has a pleasant light odor on the linalyl formate type but more woody and more lasting. Many odors can be improved in floralness and tenacity by the use of a small percentage of this product.

Nerolidyl acetate is very stable and has a very pleasant odor recalling linalyl acetate but more balsamic, more woody. In fact it completes and fixes the odor of linalyl acetate remarkably well. Some soap perfumers said it reminded them of freshly laundered linen dried in the open air and as such very desirable in soap perfumes.

Nerolidyl isobutyrate has a nice slightly green fruity odor. It is stable and lasting and can find a use as a fixative in many types of floral odors. Nerolidol and its esters are very worth while investigating by perfumers and flavorists.

The odor of geranyl acetone could be described as softly green, recalling a combination of some geranyl esters blended with certain types of ionones. It has an overall slightly fatty rose odor. It could form a good base for synthetic lavender, geranium and rose bouquets of all kinds. It can also be used in various fancy bouquets where it contributes its own original character. It has been variously described as having an

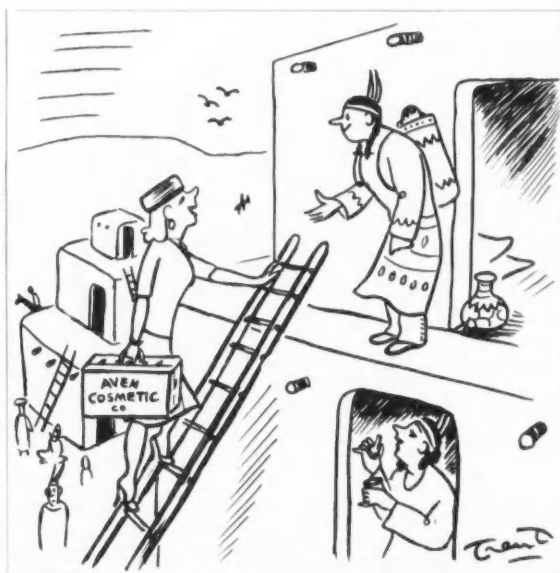
orris-like character, the odor of the skin of green apples with a suggestion of apple brandy. It has been proposed for use in lavender and jasmin compounds. Due to its extreme stability, it is a good perfuming agent for soaps, detergents and industrials. After its incorporation in unstabilized soap for six to twelve months, the odor and color remained good. Some twenty-one experimental compositions were made up incorporating geranyl acetone from 2 to 58 per cent. Most of these were floral bases such as rose, muguet, ylang, etc., all with encouraging results.

Alpha irone, in 10 per cent alcoholic solution, has a strong orris note. In 1 per cent solution it exhibits an astonishing similarity to raspberry brandy. It is one of the most powerful, tenacious and versatile of aromatics. It is also one of the most important constituents of the natural essential oil of orris. Kept five months in soap, the odor and color remained good and this product proved completely stable for this test period.

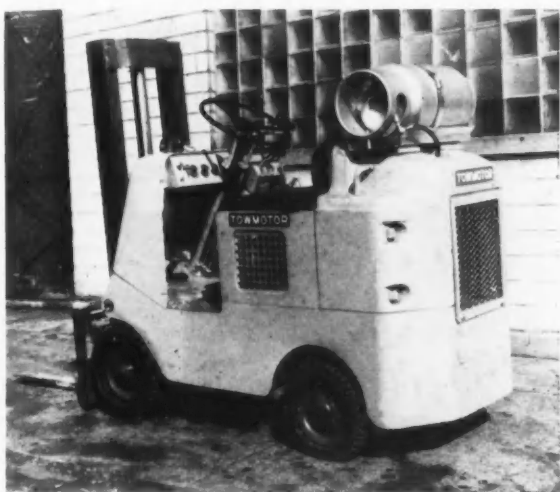
Beside the irone orris note, it has been suggested that this product has a complex note of dates and figs warmed by the sun, which would favor its use in flavors. It has also been suggested that this product could be used in the reproduction of the natural oil of orris, in rose perfumes and in many fancy perfumes, principally those of the chypre type, where it blends well with oak moss, patchouly, vetiver, etc. Also with all types of perfumes to which it will give unusual warmth and tenacity. In flavors it is a *must* for the reproduction of the berry flavors such as raspberry, blueberry, etc.

This completes the review of the products now available from this very important new synthesis. As more products will become available, we will keep the readers of the *American Perfumer and Aromatics* informed about them.

For part of the information contained in this article the writer is indebted to the following sources: Paul Bedoukian: Research Trend in Perfume Materials; Gildmeister and Hoffmann: The Essential Oils; Dr. E. Guenther: The Essential Oils; and Chemical Week: Building on Engineering Teamwork (June 1, 1957).



"Good morning, I'm selling cosmetics door-to-door!"



How to Stop Mishaps in Materials Handling

Practical suggestions to increase efficiency
and eliminate accidents

ERNEST W. FAIR

How does your particular plant procedures in materials handling stack up against the following suggestions which have been based on studies of how a large number of firms keep accidents in this department at a low point?

Constant attention to making certain we have the proper type of equipment for each task is a must rule. The value of a specific type of materials handling equipment is in its ability to perform a certain task. Using any substitute is not only adding to costs but asking for accidents. Many occur because of makeshift equipment use in plants everywhere.

The capabilities and limitations of each type of equipment should be known not only to company executives but to every plant employee using every piece of such materials handling equipment and they should never be exceeded no matter what the emergency may be.

A second must is proper maintenance. The employee should be taught to make quick visual checks of each piece of equipment before it is used every time to be certain that safety factors are present. Good procedure is to furnish each operator of such equipment with a list of items for a daily checkup before he starts use of the equipment.

Periodical Examination

Materials handling equipment should be subjected periodically to a complete examination of working parts. Usually this should be done at least once a week and even oftener where heavy use (and some times overload use) has been made in the plant. Cranes, rope slings and other lifting devices need a daily inspection before use.

Hand trucks of various types used in handling materials are the cause of many accidents. Reasons: the wrong truck in use, weak construction or poor repair

therein, poor floor conditions and insufficient aisle space where used, careless loading and unloading practices.

The Employers Mutual Liability Co. of Wisconsin has developed the following rules for handling this type of equipment which should be posted about the plant and given to employees for re-reading from time to time:



1. No riders should ever be allowed; trucks are not made for that purpose.
2. Be sure the load is set so that it will not slide or roll off.
3. With a heavy load or unwieldy truck ask for help; don't strain yourself.
4. Avoid "horse play" with trucks; don't hop rides on empties.
5. Wear safety shoes when using trucks of any kind.
6. Trucks not in use should be kept out of passageways.
7. Give warning when you approach blind corners.
8. Never use a truck with broken wheels or damaged handles.
9. Always keep the axles greased.

In the use of four-wheel push trucks the following safety suggestions should always be followed: (a) Keep your feet out from under the wheels and casters when loading and shifting the position of trucks. (b) Except where designed to be pulled keep the truck in front of you and push. Lift trucks are made to be pulled. (c) Never load a truck so high you can't see over it when pushing. (d) Place your hands for pushing where your fingers cannot be crushed if the truck runs close to or bumps into something. (e) When not in use the handle should be kept in upright position to prevent a tripping or stumbling hazard.

Two-Wheel Hand and Power Trucks

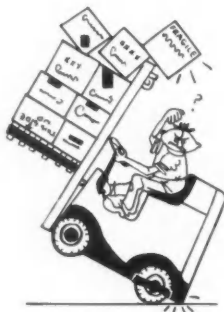
On two-wheel hand trucks here are must safety procedures: (1) Learn to balance the load and place it to stay on the truck. (2) Look out for broken, cracked



or splintered handles. (3) Never leave a truck where it can fall over and obstruct a passageway. (4) Never go ahead of your truck down a ramp. (5) Never run a truck over a trucking plate or skid that is not fastened in place securely.

Here are some safety suggestions for use of power industrial trucks as developed through long experience of the Elwell-Parker Electric Co.:

1. Move control levers firmly from one speed to another and without hesitation.
2. Keep your load as low as possible when moving; avoid tipping over in this way.
3. Keep your truck behind the load for if you should fall off the load will be moving away from you. On steep inclines it is some times better to reverse this position.
4. Avoid making quick or jerky stops.
5. If the truck has a tilting device use it. The tilt will avoid spilling the load when rounding corners.
6. Go easy when approaching danger points such as elevator gates, pits, bridges, inclines, tracks, tunnels, etc.
7. Inspect your load closely before you pick it up and if you have to move a doubtful load slow down.
8. Be sure to pick up every load squarely for then there is less danger of the load shifting due to offside loading, while traveling.
9. Report rubbish on the floors as soon as you spot it.
10. Don't cut corners—keep your truck clean—don't carry passengers and don't allow others to operate your truck.



On this particular type of materials handling equipment it is best to report the need for repairs immediately to avoid strain on other parts. Operators should also be instructed to report materials or obstructions left in aisles and to observe traffic rules. They should be cautioned against driving with wet or greasy hands and to slow down before opening doors by remote control.

Low clearance spots should be identified wherever power trucks are used and fire prevention rules made known to operators. They should also be taught to avoid sudden stops, starts and changes in pace when moving bulky materials and particularly liquids and to approach swinging doors squarely and in the center.

Where more than one truck is in use a space of 15 feet should be kept between them. It's also good procedure to teach that trucks should be parked safely and to insist that operators look before they start, to avoid crowds and allow no fooling around their trucks.

Floor Surfaces

Another materials handling hazard which receives far too little attention is the condition of floor surfaces over which any type of such equipment is used. Such floor surfaces should receive constant inspections to make certain they are even, free from holes, pits and sudden changes in elevation. Not only will such condi-

tions cause loads to fall but they will also make it easy for operators to lose control of their equipment.



Approved operating methods and training programs are well worth the time and trouble it takes to instill them into employees. They must have proper instruction and be made aware of the danger of certain operations and situations present in materials handling that are not so important on other jobs where the men may have worked before.

It has also been found that great increases in safety in use of materials handling equipment can often be obtained by more attention to adequate aisle and storage space. Aisle areas should always be clearly marked and nothing permitted to be left or stored within such lines. The width of every aisle should be adequate for safety. Where two-way traffic is present it should be at least three feet wider than the combined width of the widest vehicles in use in the plant; two feet wider for single aisles.

There should be adequate lighting in all such areas and warning signs and mirrors should be set up at every corner and intersection. All storage areas should be clearly identified and set aside for that specific purpose. Adequate storage areas should also be provided for every type of materials handling equipment when not in use so that it will not obstruct other areas of the plant.

Non-mechanical Hazards

With all the modern equipment we have accidents still occur through non-mechanical things in materials handling such as injuries from weight lifting. The U.S. Department of Labor in a special bulletin listed these causes of weight lifting injuries (sprains, strains and hernia) which show the steps to be avoided: overtaxing individual capacity, lack of lifting equipment, improper lifting practice, physical predisposition, poor housekeeping and joint lifting.



Good housekeeping throughout storage areas and all other parts of the plant where materials are handled should also be followed. A disorderly arrangement of materials and storage asks for accidents.

Unsafe conditions are easy to spot. Here is a check list to use on all materials handling machinery and equipment: (1) Be sure it is adequately guarded. (2) Check for any defective condition. (3) Don't accept equipment of unsafe design or construction. (4) Be sure there is safe illumination. (5) Have adequate ventilation. (6) Be sure employees use proper clothing. (7) Permit no operation of any equipment without authority.



DR. KURT KULKA*

The Preparation of Aromatic Aldehydes V

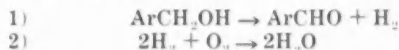
Preparation of Benzaldehydes: Indirect Methods

This section discusses those preparations of aromatic aldehydes whereby a functional group connected to the aromatic ring is converted to the formyl group.

Preparation of Benzaldehydes from Alcohols

1. Catalytic Vapor-Phase Dehydrogenation

Catalytic dehydrogenation of primary alcohols in the vapor-phase proceeds thus:



This is one of the most important methods of preparing aldehydes. Material costs are low, and side reactions (such as acid and ester formation, or aldol condensations followed by dehydration) occur to a much smaller extent than in wet oxidation procedures.

Catalysts: The functions of the catalyst in this reaction are:

- 1) Dehydrogenation of the alcohol to the aldehyde.
- 2) Catalysis of the reaction between hydrogen and oxygen.

The hydrogen formed in the reaction must be removed as soon as it is formed, since

- a) Reaction 1 above is reversible. Hence prompt removal of the hydrogen will increase the yield.
- b) Hydrogen adsorbed on the catalyst will inactivate it. Removal of hydrogen is accomplished by the catalytic reaction with oxygen (air), which is introduced into the process.

The common catalysts are copper and silver, which metals carry out the above functions without causing decomposition of the alcohol. Combinations of these catalysts, or the addition of oxides of chromium, manganese or zinc, result in improved catalysts, having stronger catalytic power and higher resistance to poisoning. In recent years the literature, and particularly the patent literature, has described many such combinations. These catalysts are generally supported on carriers such as asbestos, etc.

*Fritzsche Brothers Inc.

Copper Catalyst

Sabatier and Senderens¹⁰ were the first to use reduced copper. Bouveault¹⁰ prepared a catalyst by the reduction of copper hydroxide on copper gauze at 300°C. Lewinsohn¹¹ discussed the preparation of a copper catalyst, its application, regeneration and a dehydrogenation apparatus. A very interesting paper by Allison, Gorsich and Binder¹² describes the process of employing a copper catalyst and a laboratory apparatus for experimental use.

Silver Catalyst

A silver catalyst suspended on asbestos was first used by Moureu and Mignonac.¹³ With the aid of this catalyst, benzyl alcohol was dehydrogenated to benzaldehyde at 230-300° in a vacuum of 20-40 mm., with a yield of 80-100%.

Silver-Copper Catalyst

This type of improved catalyst was first described by Moureu and Mignonac.¹⁴ A silver-copper catalyst suspended on pumice was recommended by Davies and Hodgson;¹⁵ with this catalyst benzyl alcohol was reacted at atmospheric pressure at 350°C—75% of the benzaldehyde and 10% of benzoic acid were obtained.

A catalyst inactivated by prolonged exposure to atmospheric conditions can be reactivated by treatment with ammoniacal silver nitrate.

Copper-Chromite Oxide Catalyst

A copper-chromite oxide catalyst deposited upon pumice was first used by Dunbar, Cooper and Cooper.¹⁶ The preparation of this catalyst is described by Lazier and Arnold.¹⁷

Amount of Oxygen: For best results the theoretical (or less) amount of oxygen is gradually introduced into the reaction. An excess of oxygen can cause side reactions.

Reaction-Temperature: The temperature of the reaction chamber holding the catalyst should be slightly

higher than that of the aldehyde. Aromatic alcohols can be advantageously dehydrogenated in a vacuum and at a temperature of 300-350°.

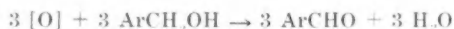
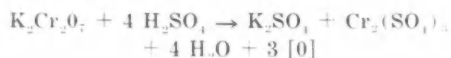
Reaction 1 (dehydrogenation of the alcohol) is endothermic; reaction 2 (formation of water) is exothermic. This may at times make temperature control difficult.

Limitations of the Reaction: Thermo-labile alcohols and their aldehydes do not lend themselves well to this reaction.

Remarks: The important work of Marek and Hahn,¹⁸ and the yearly review on oxidation procedures by Marek in "Industrial and Engineering Chemistry" are important contributions to this field.

2. Oxidation with Sodium or Potassium Bichromate and Sulfuric Acid

Oxidation with sodium or potassium bichromate and sulfuric acid is generally applicable to the preparation of aldehydes from primary alcohols.¹⁹ The reaction proceeds according to:



and can be conducted in various ways; for example:

- 1) Sulfuric acid is added to a well agitated aqueous mixture of the alcohol and bichromate.
- 2) The oxidizing mixture, consisting of an aqueous solution of the bichromate and sulfuric acid, is added to the alcohol.
- 3) The alcohol is added to the oxidizing mixture.

Such oxidizing mixtures are well known, e.g.: the Beckmann Mixture, consisting of 60 parts potassium bichromate, 80 parts sulfuric acid, and 270 parts water; and the Kiliani Mixture, which is composed of 60 parts sodium bichromate in a similar sulfuric acid solution.

Examples

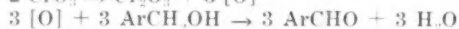
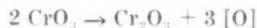
1-Methyl-naphthaldehyde was obtained in an 84% yield from the carbinol by oxidation with 2 N bichromate-sulfuric acid solution at a temperature of 60-65°.²⁰

o-Tolualdehyde (*o*-methyl-benzaldehyde) was obtained in a similar way by adding a bichromate-sulfuric acid solution to *o*-tolylcarbinol, followed by heating the reaction mixture for 1 hour on a steam bath.²¹

Remarks: Efficient agitation throughout the reaction is important. To prevent the formation of the carboxylic acid, an excess of the oxidizing agent is usually avoided. Bichromate-acetic acid solutions were used by Bowman et al.²² for the oxidation of alcohols to aldehydes.

3. Oxidation with Chromium Trioxide

This reaction proceeds according to:



and is in the oxidation of small amounts of aromatic alcohols. The reaction is conducted in acetic acid solution; a primary amine can be added to form a Schiff's base with the aldehyde as soon as it is formed.

Example

The preparation of 3,6-dimethoxy-2,4,5-trimethyl-benzaldehyde²³ is an example of this reaction.

"18.7 g. of the alcohol (0.089 mol.) are dissolved in 250 cc. acetic acid and 20 cc. water. The mixture is warmed up to 45-50° and a solution of 6.23 g. chromium trioxide, dissolved in 150 cc. acetic acid and 20 cc. water is added during 1 hour. After com-

pletion of the reaction the mixture is poured on ice and the aldehyde recovered in an 83% yield."

4. Oxidation with Manganese Dioxide

Solid manganese dioxide was used by Highet and Wildman²⁴ for the oxidation of alcohols to aldehydes. The reaction was carried out in various solvent systems such as ether, hexane and chloroform. The best result, i.e., an 89% conversion to benzaldehyde, was obtained by agitating 0.109 g. benzyl alcohol with 1 g. manganese dioxide in 40 cc. chloroform for 23 hours at room temperature. Under similar conditions, but over a period of 3 hours, veratryl alcohol gave a 58% yield of the corresponding aldehyde.

Harfenist, Bayley and Lazier²⁵ prepared manganese dioxide (called MnO₂ "A") by heating manganese carbonate or oxalate to 220-280°C. for about 18 hours. A slightly more efficient oxidant (called MnO₂ "B") was obtained by treating the MnO₂ "A" with nitric acid, washing it free from the acid and re-drying it. By using these oxidizing agents, benzyl alcohol, various aryl carbinols and aliphatic alcohols were oxidized in good yields to the corresponding carbonyl compounds. The reaction was carried out in hexane or ether solution over a prolonged period at room temperature, in the following manner: to 100 g. manganese dioxide and 300 cc. of the solvent, 25 g. of the alcohol to be oxidized were added and the flask stoppered and shaken mechanically to keep the manganese dioxide in suspension. After completion of the reaction, the catalyst was filtered off, and washed with fresh solvent. From the combined solvent portions, the reaction product was recovered by distillation of the solvent.

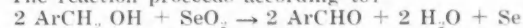
Example

Benzyl alcohol was oxidized with MnO₂ "B" in an 80% yield (assay 74% aldehyde) after 137-hours reaction time. Veratryl alcohol was converted to veratryl aldehyde in an 80% yield (assay 100% aldehyde) using MnO₂ "B" and ether, after 113 hours reaction time.

Sugasawa and Mizukami²⁶ reported the oxidation of aromatic alcohols such as benzyl alcohol or 2-hydroxybenzyl alcohol with activated manganese dioxide at a temperature of 20-35° and 1-3 hours reaction time. Yields ranging from 60-70% of the aldehydes as semicarbazones were obtained.

5. Oxidation with Selenium Dioxide

The reaction proceeds according to:



While simple in application, this method should be considered in special cases only.

Example

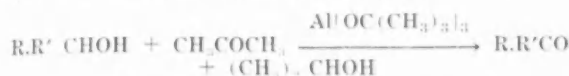
The preparation of benzaldehyde from benzyl alcohol as conducted by Weygand, Kinkel and Tietjen²⁷ is an example of the process.

"11 g. benzyl alcohol, 2 g. selenium dioxide and 10 cc. benzene are heated to 100°C. and the benzene-water azeotrope is distilled off. The remainder is distilled until a temperature of 195°C is reached. The distillate is treated with 20 cc. methanol and 5 g. phenylhydrazine. There is obtained: 4.7 g. benzaldehyde-phenylhydrazone, 0.9 g. benzaldehyde-phenylhydrazone from the methanol mother liquor, and 0.3 g. benzaldehyde-phenylhydrazone from the benzene-water azeotrope.

6. The Oppenauer Oxidation

This reaction²⁸ is widely used in steroid chemistry for the preparation of ketones from secondary alcohols. The alcohol is refluxed with a large excess of acetone, which serves as the hydrogen acceptor, in the presence

of aluminum tertiary butoxide, which acts as the catalyst. The reaction proceeds according to:



Davies and Hodgson³⁹ modified this process, converting a primary alcohol to the corresponding aldehyde by reaction with a less volatile aldehyde in the presence of the aluminum alkoxide, which activates one of the alcoholic hydrogens for hydrogen bonding. The reaction is an equilibrium:



By distilling out the aldehyde RCHO as it is formed, it is possible to drive the reaction to completion.

An aldehyde with an ethylenic linkage possesses increased activity. Thus, cinnamaldehyde on reaction with butyl alcohol yields 72% of butyraldehyde, whereas from benzaldehyde a yield of only 48% of the aliphatic aldehyde is obtained.

Example

The preparation of benzaldehyde and cinnamyl alcohol from cinnamaldehyde and benzyl alcohol will serve as an example of the process.

"To 200 g. dry cinnamaldehyde, placed in a distilling flask provided with a 3 ft. packed column, is added aluminum benzyloxide prepared from 200 g. purified benzyl alcohol and cleaned aluminum powder. Distillation is conducted at a 10 mm. vacuum, a reflux ratio of 1:10 and a take-off of 50 g. per hour whereby at the same rate 400 g. benzyl alcohol is added to the reaction mixture. After approximately 155 g. of benzaldehyde is distilled off a rapid rise in temperature indicates the end of the reaction. The residue in the flask is treated with alcohol to decompose the remaining aluminate. There are obtained: 94.5% benzaldehyde and 88.6% cinnamyl alcohol, both calculated on the cinnamaldehyde used in the reaction.

Due mostly to the large amount of alcohol to be used, this modification of the Oppenauer oxidation has found only limited acceptance in the aromatic industry.

In another modification of the Oppenauer oxidation (Yamashita and Matsumura⁴⁰) the aldehyde is obtained by reaction of 1 mol. of a primary alcohol with 2 mols. of benzoquinone (which serves as the hydrogen acceptor) and $\frac{1}{2}$ mol. of aluminum phenolate, in benzol solution. The reaction mass is permitted to stand for 1 day (or longer) at room temperature and is heated for a short time to drive the reaction to completion before working up. Among the yields reported are: 50% benzaldehyde from benzyl alcohol, 60% anisic aldehyde from anisyl alcohol, 13% cinnamaldehyde from cinnamyl alcohol and 3% phenylacetaldehyde from *beta*-phenyl-ethyl alcohol.

Schinz and co-workers⁴¹ converted the alcohol (RCH_2OH) to its aluminate, by an exchange reaction with aluminum isopropylate. This was reacted with an aldehyde (usually an aromatic aldehyde such as cinnamaldehyde) having a higher boiling point than the expected product, to give the aldehyde: $RCHO$ and the alcohol: $ArCH_2OH$. The advantage of this process is that no excess of the alcohol has to be used, and that it can be applied to unsaturated aliphatic alcohols with great success. It was used by Favre and Schinz⁴² in the irone synthesis. However, the process has not been applied for the preparation of aromatic aldehydes.

A review discussion of the Oppenauer oxidation by Djerassi appeared in "Organic Reactions."⁴³

7. Oxidation with Tertiary Butylchromate

This reaction was introduced by Oppenauer and Oberrauch.⁴⁴ Tertiary butylchromate [$(CH_3)_3CHCrO_3$], a novel oxidizing agent, can be advantageously used to prepare aldehydes from primary alcohols.

The reagent is prepared by adding chromium trioxide with efficient cooling and agitation to tertiary butyl alcohol. Benzene or petroleum ether is added and the water formed is removed with anhydrous sodium sulfate. The filtered solution is gradually combined with the alcohol to be oxidized and permitted to react at room temperature for approximately 7 days. Hydrolysis of the reaction product under acidic conditions liberates the aldehyde.

Example

The preparation of benzaldehyde from benzyl alcohol is an example of the process.

Tertiary butylchromate obtained from the reaction of 20 g. chromium trioxide with 44.4 g. tertiary butyl alcohol is dissolved in 70 cc. benzene, dried, and gradually added to a well cooled solution of 16.2 g. benzyl alcohol dissolved in 70 cc. benzene. After standing at room temperature for 7 days, 19.5 g. hydrazine sulfate in 50 cc. water is added and under efficient cooling and agitation, 250 cc. of 20% sulfuric acid is added. Working up of the reaction mass yields: 15 g. benzaldehyde and 0.8 g. benzoic acid.

8. Oxidation with N-Chlorosuccinimide

The oxidation of aromatic alcohols to aldehydes with N-chlorosuccinimide proceeds according to the following reaction:



The reaction is conducted under reflux, using chlorobenzene as the solvent and pyridine as the hydrochloric acid acceptor.⁴⁵ The following yields are obtained:

benzaldehyde	74%
α -naphthaldehyde	27%
β -naphthaldehyde	21%
<i>o</i> -tolualdehyde	71%
<i>m</i> -tolualdehyde	49%
<i>p</i> -tolualdehyde	62%

(In this connection, the important selective oxidation of cholic acid and cholesterane with N-bromosuccinimide by Fieser and Rajagopalan⁴⁶ should be mentioned.)

9. Oxidation with N-Bromoacetamide

The oxidation of certain aromatic alcohols to aldehydes with N-bromoacetamide was described by Le-comte and Dufour.⁴⁷ Only primary and secondary alcohols having the alcohol group attached to the aromatic nucleus lend themselves well to this reaction.

The yields of aldehydes and respective ketones are generally good, amounting often to 75-90%.

Example

The procedure may be illustrated by the preparation of anisaldehyde.

"To 1.36 g. anisyl alcohol (p -MeOC₆H₄CH₂OH) in 15 cc. benzene is added: 1.5 g. N-bromoacetamide ($CH_3CONHBr$) in 2 cc. pyridine. After a reaction time of 12 hours the excess N-bromoacetamide is decomposed with sodium sulfate, the benzol layer washed with dilute sulfuric acid and dried. An excess of 2,4-dinitrophenylhydrazine sulfate in ethanol is added to form the 2,4-dinitrophenylhydrazone of *p*-methoxybenzaldehyde in a 71% yield, i.e., 2.28 g."

10. Oxidation with Sodium Hypochlorite Solution

Oxidation of aromatic alcohols to aldehydes with an aqueous sodium hypochlorite solution was reported by Benedetti, Vanselow and Vanselow.⁶⁸ As an example of this process the preparation of benzaldehyde will be described:

300 parts of benzyl chloride are hydrolyzed with a solution of 95 parts sodium hydroxide in 1,600 parts of water. Then 1,300 parts of sodium hypochlorite solution (prepared by passing 230 parts chlorine gas into a solution of 270 parts of sodium hydroxide in 800 parts of water) are slowly introduced, gradually oxidizing the benzyl alcohol to the aldehyde. The latter is continuously removed by steam distillation.

This separation is made possible because benzyl alcohol is less volatile than the aldehyde and a given amount of steam will carry only 4 parts of the alcohol but 40 parts of the aldehyde.

Recently the action of aqueous hypochlorite on several benzyl alcohols was extensively studied by Meyers⁶⁹ who developed an efficient oxidation procedure. The highest yield of the aromatic aldehyde was obtained under the following conditions:

- 1) A slight excess over the equivalent of the hypochlorite has to be used.
- 2) Methanol (which is stable to hypochlorites) is added to the reaction mixture, to improve solution of the alcohol therein.
- 3) Sufficient potassium carbonate is added to the hypochlorite solution to maintain a pH of 9-11.
- 4) The reaction mixture has to be agitated at room temperature for at least 12-16 hours.

Keeping these points in mind, the preparation of benzaldehyde will be described:

10.8 g. (0.1 mol.) benzyl alcohol are diluted with 60 cc. methanol and 112 cc. (0.112 mol.) potassium hypochlorite solution are added. 250 cc. water are added to the solution, and agitated. The reaction temperature will rise to 46° in a short time. Agitation is continued overnight at room temperature (36-40°). The resulting turbid solution, having a pH of 9-11, is extracted four times with benzene, the combined extracts are dried over anhydrous sodium sulfate, and after stripping off the solvent in vacuum, the benzaldehyde is obtained by fractional distillation in a yield of 8.4 g. (77% yield). No benzoic acid was formed during this process (i.e., the aqueous alkaline residue from the benzene extractions, after acidification, did not yield benzoic acid).

Preparation of the hypochlorite solution:

H.T.H. (Monsanto) containing 35% "available" chlorine was used and preferred over commercial bleaching powder containing 24% "available" chlorine. The solution was treated with potassium carbonate solution to a final pH of 9-11. The precipitated calcium carbonate was filtered off. The precipitate was extracted with water and these extracts and the original filtrate combined and diluted so that 100 cc. contained 0.1 mol. potassium hypochlorite. 100 g. of H.T.H. were treated in such a way that 100 cc. of the final solution were virtually of this concentration.

11. Oxidation of Hydroxybenzyl Alcohols

The oxidation of hydroxybenzyl alcohols to the corresponding hydroxybenzaldehydes is important, because a) many of these aldehydes and their derivatives are interesting perfume and flavor components, and b) the alcohols are obtained by a simple condensation from a phenol and formaldehyde. The following reactions will be discussed:

- 1) Condensation of molecular amounts of phenols

with formaldehyde in an alkaline medium to hydroxybenzyl alcohols. This reaction is known as the Lederer-Manasse reaction. Lederer⁷⁰ applied heat and a catalytic amount of alkali in the condensation of phenol with formaldehyde. Manasse⁷¹ used an equimolar amount of concentrated alkali and permitted the reaction to proceed at room temperature. The latter procedure gives better results and is, therefore, preferred.

- 2) Condensation of phenol and formaldehyde under acidic conditions to hydroxybenzyl alcohols.
- 3) Oxidation of hydroxybenzyl alcohols to the corresponding aldehydes.

In this last reaction mild oxidizing agents, such as certain nitrogenous compounds, are generally used in order to avoid possible side effects (fission of the aromatic ring, etc.). The yields are generally good. Recently Meyers⁷² used aqueous hypochlorite solutions for the oxidation and obtained *o*-methoxy-benzaldehyde in good yields from the corresponding alcohol. However, *o*-hydroxybenzyl alcohol did not lend itself to the process, and chlorination of the ring resulted.

Position of the Alcohol Group:

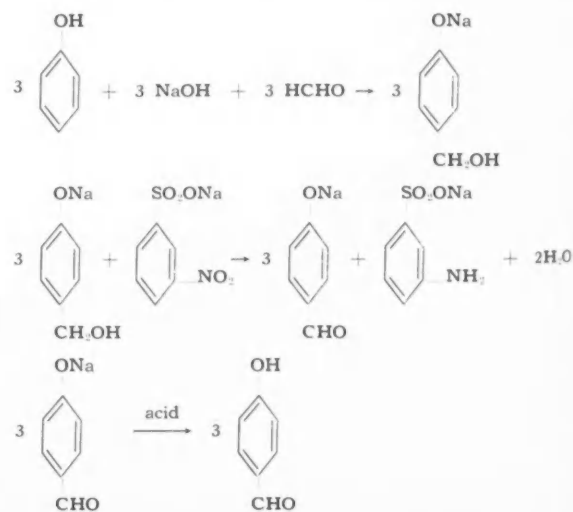
If the *para* position of the phenol is open, reactions 1) and 2) will give yields up to 80% of predominantly the *para*-hydroxybenzyl alcohol, and a small amount of the *ortho* isomer. If the *para* position of the phenol is occupied, the CH₂OH group will enter the *ortho* position. However, the yields will be considerably lower. For example, Henry and Sharp⁷³ prepared 2-hydroxy-5-tertiary butylbenzaldehyde from *para*-tertiary butyl phenol in a 46% yield and 2-hydroxy-5-isoamylbenzaldehyde in a 35% yield from *para*-isoamyl phenol, using the procedure of Ellis.⁷⁴

The following discussion deals with:

- a) The combined reactions 1) and 3)
- b) The combined reactions 2) and 3).

In a) the combined reactions 1) and 3) oxidation of the formed alcohol is best done with the sodium or potassium salt of a *meta*-nitroarylsulfonic or nitroarylcarboxylic acid in alkaline medium.

The condensation of phenol with formaldehyde to *para*-hydroxybenzyl alcohol and subsequent oxidation with sodium *meta*-nitrobenzenesulfonate⁷⁵ is an example of this process:



"9.4 parts phenol are dissolved in 150 parts 3.5% aqueous sodium hydroxide solution. 8.5 parts 40%



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formaldehyde solution are added. After prolonged standing at room temperature, the odor of formaldehyde disappears, indicating the formation of the benzyl alcohol. Then 10 parts of sodium hydroxide are dissolved in the reaction mixture and 12 parts of sodium *meta*-nitrobenzenesulfonate are added. The reaction mass is refluxed for 1½ hours. On acidification a mixture consisting predominantly of *para*-hydroxybenzaldehyde and some of the *ortho*-isomer is obtained."

In a similar way, vanillin can be prepared:

"15 parts vanillyl alcohol (prepared from guaiacol and formaldehyde) are dissolved in 120 parts 3.5% aqueous sodium hydroxide solution. Then 25 parts of sodium *meta*-nitrobenzenesulfonate are added and the reaction mixture refluxed for 4 hours. On acidification vanillin results."

In b) the combined reactions 2) and 3), the phenol is reacted with formaldehyde in the presence of an oxidizing agent such as nitrosobenzene, nitrosophthalene, nitrosodimethylaniline, etc. An acidic catalyst, such as hydrochloric acid gas is applied. In conducting the reaction, the reactants are added to a solvent and the solution is kept at a suitable temperature for the required length of time. The process is generally applicable to phenols and some phenol derivatives such as anisole.

The preparation of vanillin from guaiacol is an example of this process:

"4 kg. guaiacol, 8 kg. formaldehyde solution, and the nitrosodimethylaniline derived from the nitrosation of 8 kg. dimethylaniline, are added to 50 kg. methanol. The solution is heated for 2 hours on a steam bath during which time hydrochloric acid gas is bubbled through. Then the mixture is cooled, diluted with water, the methanol recovered and the vanillin separated from the resulting aqueous part. The nitrosodimethylaniline is mostly transformed to *p*-amidodimethylaniline."

Similar processes for the preparation of hydroxybenzaldehydes such as vanillin, salicylaldehyde, etc., were applied by Weiss,⁷⁶ who used for 1 mol. of the phenol, 1 mol. of formaldehyde solution and ½ mol. *para*-nitrosodimethylaniline and hydrochloric acid gas as the catalyst.

Instead of formaldehyde, a formaldehyde derivative can be used.⁷⁷ For example, phenols and their derivatives were condensed with methenamine (instead of formaldehyde) using a nitrosodimethylaniline, nitrosophenol or nitrosobenzene-sulfonic acid as the oxidizing agent and hydrochloric acid gas as the catalyst.

While in the above described reactions 1 mol. of a phenol was condensed with 1 mol. of formaldehyde (or formaldehyde derivative), Martin⁷⁸ reacted 2 mols. of formaldehyde with 1 mol. of phenol under alkaline conditions and obtained a mixture of *p*-hydroxybenzyl alcohol, 2,4-di(hydroxymethyl)-phenol and 2,4,6-tri(hydroxymethyl)-phenol.

Preparation of *p*-Nitrosodimethylaniline-Hydrochloride

This compound can be prepared according to Adams and Coleman⁷⁹ in the following way:

$(\text{CH}_3)_2\text{NC}_6\text{H}_5 + \text{HNO}_2 \rightarrow p(\text{CH}_3)_2\text{NC}_6\text{H}_4\text{NO} + \text{H}_2\text{O}$
"150 g. technical dimethylaniline (1.24 mol.) is dissolved in 750 cc. 17% aqueous hydrochloric acid. The solution is cooled and a mixture of 90 g. (1.24 mol.) sodium nitrite technical in 150 cc. water is gradually added under agitation, keeping the temperature below 5°. The precipitated *p*-nitrosodimethylaniline-hydrochloride is filtered on a Buchner funnel and washed with 300 cc. dilute hydrochloric acid."

Remarks: The above formulation procedures can be applied to anilines whereby amino-benzaldehydes are obtained.

Oxidation with organic nitrogenous compounds is not confined to hydroxybenzyl alcohols but can be applied, for example, to other aromatic alcohols.

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76. A. Weiss, *British Patent* 139,153 (May 27, 1920)
77. D. M. Al'vin-Gutats, V. A. Ivanov, I. M. Lebedev, and V. Ya. Serdyukov, *Russian Patent* 65,996 (March 31, 1946)
78. R. W. Martin, *J. Am. Chem. Soc.* 74 (1952), 3024; cf. R. W. Martin, "Chemistry of the Phenolic Resins," New York, John Wiley, 1956
79. R. Adams and C. H. Coleman, in "Organic Syntheses," Coll. Vol. 1, p. 214, New York, John Wiley, 1941

How to Find Business Help

Robert Updegraff's notion is that when you are advertising for a person to help in your business, you should be specific, even though your specifications may sound silly to some people.

"I firmly believe," he says, "that a seemingly impossible specification *can* be filled, if you have the nerve to write it. Oddly enough, if you were to run an advertisement for a left-handed man with red hair and hazel eyes, who can speak Italian and Arabic, and who has had two years' experience in selling copper cooking utensils and has spent three years on the rewrite desk of a metropolitan newspaper—you would have a pretty fair chance of filling the job, perhaps with one or two compromises.

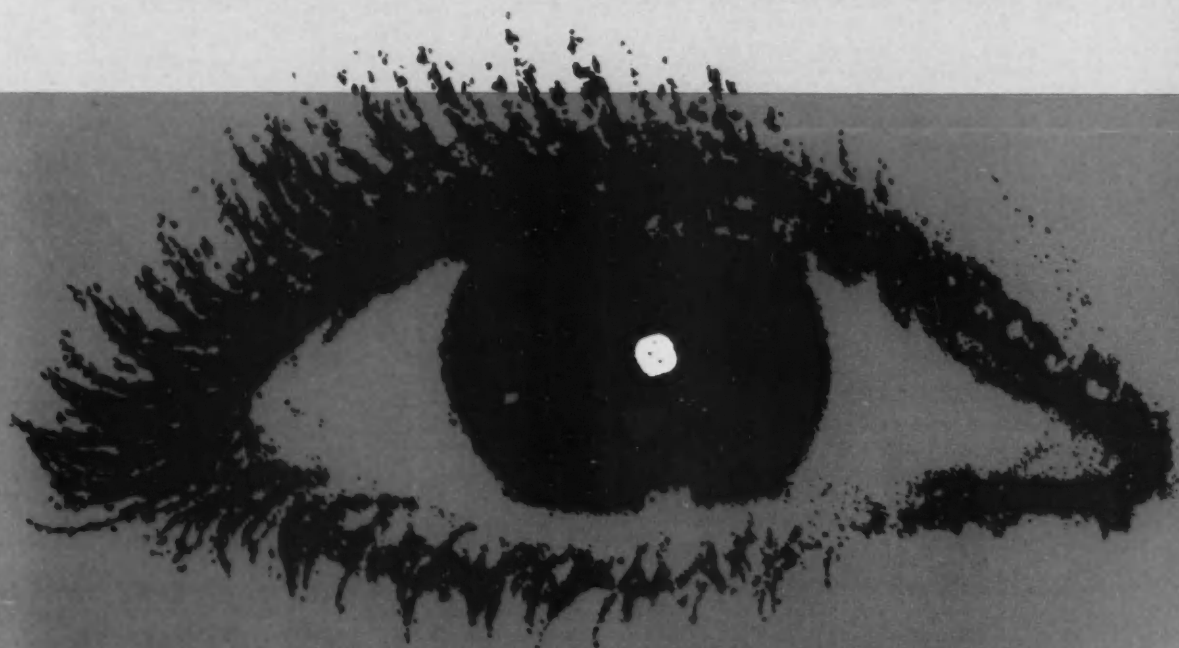
"We may not find the ideal man for any job, but certainly we are not likely to unless we hunt for exactly the man we want. So why not list *all* the desired qualifications, and at least come as close as possible to filling them?"

EYES HI-LITED WITH MAX FACTOR HI-FI CREME MASCARA



Women in tune with beauty are selecting this new Max Factor product, handsomely packaged by Sheffield... two brushes and tube in neat purse-size container. For functional, saleable packaging always look first to The Sheffield Tube Corporation. Established 1850... Finer packaging from a century of experience. Home offices and factory: New London, Connecticut. General sales offices: New York, Chicago and Los Angeles.

sheffield tubes



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Book Reviews

HANDBOOK OF MATERIAL TRADE NAMES, SUPPLEMENT I, by O. T. Zimmerman and I. Lavine. Industrial Research Service, Inc., Dover, N. H. 1956. 383 pages, size 10½ x 7½ inches. Price \$12.50.

This supplement is intended to bring up to date the revision published in 1953. The authors intend to publish supplements periodically.

Just as the 1953 edition had three sections, so does this volume. The sections are: (1) Trade Name Section; (2) Classification Section and (3) The Directory Section.

This is not just a handbook of material trade names but a book of trade named products, whether materials or finished articles of commerce, for example, Brucellin, Empiral and Steclin, all consumer drug products. Similar examples in other consumer items are also found.

This is one of the best handbooks of trade named materials seen by this reviewer. The authors handle their material well. The title might be changed to include consumer goods, however.

Because of the scope of the book few cosmetic trade named materials are listed. A number of perfumery specialties are given. The directory section is a tremendous task and an useful addition to the book.—*M. G. deN.*

MODERN APPLIED PHOTOGRAPHY by G. A. Jones. Philosophical Library, 1957. 162 pages, size 5 x 7 inches, illustrated and indexed. Price \$4.75

This is a book dealing with the highly technical procedures of industrial and scientific photography. While of little use to the amateur photographer it will be of particular interest to visual training personnel, time study motion analysis specialists, scientists and production executives, etc. With chapters covering Scientific Recording, Photography by Dim and Bright Light, Recording of Colour, Infra-Red Sensitivity, Radiography, Atomic

Particles, Recording and Analysis of Motion, to name only a few, this book, though brief, might easily provide the answer to your production or laboratory photography problem.

ANNUAL DIRECTORY & BUYERS' GUIDE, 1957 Edition, edited by W. R. Littlejohn. G&M Press Ltd., London, 1957. 240 pages, with advertising, size 8 x 10½ inches, with illustrations and index.

This is a complete buyers guide listing of suppliers in England, including essential oils, isolates, aromatic chemicals and basic materials, laboratory and plant equipment, and packaging materials.

The directory also includes complete sections devoted to essential oils and synthetics; perfumes, cosmetics, soaps and flavors; and a section of general information such as temperature correction tables, metric and imperial equivalents, associations and societies, etc.

The Annual Directory and Buyers' Guide is included in *The Perfumery and Essential Oil Record* subscription fee of 55s.

THE CHEMISTRY AND TECHNOLOGY OF LEATHER, Volume 1, edited by Fred O'Flaherty, William T. Roddy and Robert M. Lollar. Reinhold Publishing Corp. 1956. 495 pages, size 5½ x 9 inches, illustrated and indexed. Price \$14.00

Volume 1, entitled Preparation for Tannage, describes the histology and composition of animal skins and the operations performed on these skins during beamhouse practice, chemical structure of skin proteins, preservation, unhairing, liming, bating, pickling, degreasing etc.

This is the first of a four-volume monograph. Subsequent volumes will cover Tannage, Process Control of Quality Leather, and Leather Properties. Anyone seeking specific knowledge in leather chemistry and technology should find this monograph a valuable source.

COMMERCIAL WAXES, edited by H. Bennett. Chemical Publishing Co., 1957, Second Edition, 688 pages, size 5½ x 8½ inches, indexed. Price \$15.00

A symposium and compilation of all types of waxes and waxlike substances and an extensive wax formulae are included in this book. This edition covers in detail the mineral, vegetable, animal and synthetic and compounded waxes, listing numerical data on their physical and chemical properties, solubilities and uses. The wax formulae fills almost 200 pages covering everything from adhesives for masks to waterproofing substantive emulsion. Right after corpse wound filler is a full 22 pages of cosmetic preparations which might be of particular interest.

POLISHES AND CLEANING MATERIALS by A. Davidsohn. Leonard Hill Books Ltd., London, 1956. 298 pages, size 5 x 8½ inches, illustrated and indexed. Price 21s. net.

This third revised and enlarged edition is not a collection of formulae but a guide for the understanding of principles of essential interest to the manufacturer, the chemist and to technical personnel active in the field of polishes and cleaning materials. This edition has been enlarged to include many of the synthetic detergents and new types of cleaning and polishing materials, with separate chapters on raw materials, shoe polishes, floor polishes, acid cleaning compounds, solvents, synthetic detergents, etc., and a liberal number of numerical tables and basic formulae.

SEIFEN UND WASCHMITTEL. Verlag Hans Huber, Bern, Switzerland. 1955. 139 pages, size 8¼ x 6 inches. (U. S. Agent: Intercontinental Medical Book Corp., New York 16, N. Y.). Price 12 D.M. (Approx. \$3.00 U. S.).

The Swiss Analytical and General Chemistry Society has selected a group of Swiss chemists to edit this second edition of text dealing with analytical methods for soap, detergents, oils and fats.

The size of this book precludes the completeness ordinarily expected in such work. However, a few tables and methods are not commonly given in our texts.

Analytical chemists dealing with the materials mentioned earlier might like to have this book to supplement their present references.—*M. G. deN.*



Packaging and Promotion



WARNER-LAMBERT

To support the introduction of Beauty Curl, the Lambert-Hudnut division of the Warner-Lambert Pharmaceutical Co. is offering dealers sales aids including streamers and this 6 carton counter display unit in color. The firm claims Beauty Curl to be the only spray-set that contains no alcohol. It is packaged in a six-ounce, metallic blue and gold sprayer-topped container. \$1.65 plus tax.

CHARMAINE, INC.

A continental packaging innovation is being introduced into the United States by Charmaine. Individual "Paks" of Fom-Tan Sun Tan Lotion and Fom-Top Liquid Shampoo are designed for travelling. The Shampoo comes in four assorted fragrances in the plastic case of 10 "Paks"—Boquet, Lavender, Rose and Cologne. The price of the 10 pack case is the same for the Sun Tan Lotion and the Shampoo. \$1.50.



FIVE DAY

Five Day Roll-On deodorant has been placed in national distribution through rack jobbers, chains and wholesale druggists by Five Day Labs. The product is packaged in a tapered glass bottle equipped with a polyethylene collar containing a polystyrene ball. The gold label has a white space for brand and product identity which is printed in red and gold. Reverse-taper plastic closure is gold-metalized. The product comes individually packaged in a red and gold folding display carton.



COTY

Coty is offering a new and reportedly foolproof Lock Atomizer which prevents leakage, spilling and evaporation, with their Toilet Water, available in the following fragrances:



L'Aimant, Emeraude, L'Origan, "Paris," A'Sume, Muse, Styx and Chypre. Priced at \$2.00 plus tax.

SHULTON

Shulton introduces a new cleaning lotion, Desert Flower Beauty Clean, which, the manufacturer claims, removes three times more dirt than the leading liquid skin cleaner. Desert Flower Beauty Clean comes in a 5 oz. clear bottle, capped in gold and is encased in a white plastic basket. Retail price is \$1.25 plus tax.

TINKERBELL

Tinkerbell's Bath-O-Clock is a toy clock, 7½ inches high, filled with individual envelopes of fragrant bubble bath for the youngsters bath time fun. The clock has movable hands with which they can learn to tell time. The price is \$1.00.



PRINCE MATCHABELLI

Prince Matchabelli's newest perfume, Added Attraction, introduced last fall, makes its appearance this fall in the convenient pressurized form, Added Attraction Cologne Spray Mist. The plastic-coated bottle is bell-shaped, and royal red in color with white lettering and accents. The containing carton is white with red and bold trim, red ribbon and bow.

TUSSY

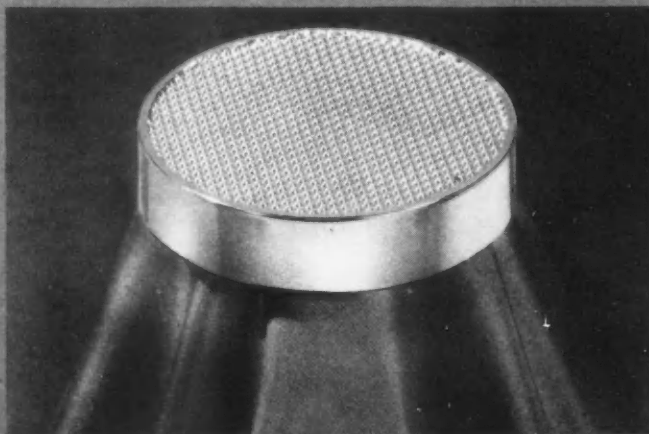
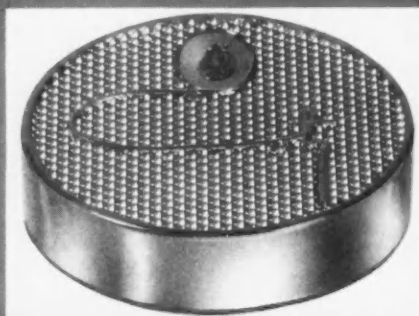
Tussy is introducing Roto-Magic a new roll-on deodorant in an unbreakable plastic applicator case of red, white and gold. It is available in cartons of twelve pieces complete with a red and white counter display holder. Tussy is supporting introduction of Roto-Magic deodorant with double page spreads in color during August, September and October in 6 national magazines. On sale in August, 1½ oz. \$1.50 plus tax.



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A Thumbnail History of Soap



Photo courtesy of Cleanliness Bureau.

Origin unknown . . . Spread of pomade balls
. . . Animals sacrificed to gods in Rome con-
tributed to development of soap . . . Rise of
syndets . . . French chemist pioneer of modern
soap making

So universal is the use of soap that its name sounds familiar in any language. In Turkish it is sabun; in Arabic, saban; in Hungarian, szappan, in Italian, sapone; and in English it is plain soap. No one knows how or where soap originated. As with so many of man's achievements it is believed that soap began with the ancient Egyptians. They used a natural soda (trona) found only along the banks of the Nile and mixed it with animal and vegetable fats. This produced a jelly-like mass which hardened into a pomade. It was used mostly for medical purposes. The secret was carried all over the known world by the trading Phoenicians. Soon pomade balls, perfumed and odiferous, were known and made everywhere from Damascus to Teutonic northern Europe.

Greeks and Romans imported these medicinal balls from the Gauls, but certainly not for lathering their bodies. Not a jot of sord ever made its appearance in the great Roman public baths. All body cleansing at the time was accomplished only with hot water. If that didn't do the job they beat each other with birches. But soap—certainly not. That was used only for covering wounds and sores.

It wasn't until 150 A.D. that a Greek physician, Claudius Galen, dared mention that soap could possibly be used as a cleaner. Some six

hundred years later, an Arabian chemist, Jabir ibn Hayyan, the father of alchemy, suggested that soap used in water accomplished something quite uncanny with soiled clothes. Yet it wasn't until the seventeenth century that soap was generally accepted as a cleaner throughout Europe.

One of the reasons soap remained unpopular as a body and clothes cleaner, despite its obvious virtues, was its unbearable odor. Most soaps were made with fats (such as those from animals) linseed, turnip, hempseed and blubber. No wonder then that many European peasants who washed with a crude, home-made soap, could be smelled for quite a distance. So fully accepted was this country odor that they rejected soap made with tropical oils because they were too bland.

The combination of ashes and fats to make soap is illustrated in the story of Sapo Hill, near Rome. In ancient days, the top of this hill was dotted with altars where bullocks, sheep and other animals were burned as offerings to gods. Animal fat dripped down into the ashes of the wood fires, mixed with the ashes, and after rains was absorbed by the earth. One day a washer woman discovered that a handful of this earth in her wash acted as a magic cleaner, and the rush was on. Great dents were made in Sapo Hill as the years wore on.

Soapmaking centers developed most naturally in Spain, Italy and France where olive oils were in large supply. When merchants began bringing tropical oils into Europe, Marseilles became a supply port and simultaneously became a leading soapmaking center.

In 1666, an aggressive young entrepreneur named Rigat quickly persuaded Louis XIV to give him French soapmaking rights for a period of twenty years. He built six plants in Marseilles and so controlled soap manufacture in France that the Crown began a series of heavy taxes to wring some benefits from it. Soon production was curtailed to only a few months, only certain oils were allowed and importation of soap was prohibited. This led to its natural consequences: bootlegging and an active black market. Fake soaps that melted at the first washing hit the market. Then a law was passed in 1787 to force soapmakers to initial each ball of soap under their production.

American Colonists were practiced soapmakers. All year long they collected fats and saved the ashes from their wood fires. In the fall they held soapmaking festivals. A good worker could produce a barrel in a single day, mixing six bushels of ashes with twenty-four pounds of fat.

Even as late as the nineteenth

century the idea of using soap as a clothes and body cleaner was unpopular. One chemist in 1830 suggested, "for washing linen and other clothes which we use regularly, soap may also be used successfully." But as a metal cleaner, soap was considered superb.

Most of today's soaps are made with tropical vegetable oils from plants and trees. These are cooked, refined and processed to supply a vast market which is becoming increasingly competitive as chemists find new substitutes and cheaper production methods.

Rapidly overtaking the natural soap market are synthetic detergents, called syndets, made from a complex process involving raw materials from petroleum products, sulfuric acid and various oils.

One of the most recent detergent

discoveries is the making of a soap with sugar. It is a non-toxic, tasteless and odorless syndet. In countries like Cuba, Brazil and Mexico where sugar is in high supply, it becomes a basic ingredient for a widely used cleaner.

Soap came into existence because of the peculiarity of water. Water, as is well known, is ineffective because of its high surface tension. Soaps lower this tension, bringing about greater freedom of molecular movement. Aided in this way water becomes a natural cleanser.

The discovery that fats cooked with ashes make such a water softener came early in man's existence but it took centuries to learn how to use it effectively as a cleanser and an even longer period to discover how it could be made cheaply and abundantly.

In 1823 a French chemist Geoffroy Chevreul, discovered that every fat is composed of two substances—hard tallow or stearin and liquid oil or olein. In soapmaking, as is well known, these are transformed into three acids—margaric, stearic and oleic. The salts of these acids, soluble in water, become the main elements of soap and in combination with lye it is able to weaken and penetrate water's surface tension. As a result of Chevreul's discovery soapmaking entered into a new, scientific phase; and soapmaking grew into a mass production industry. Few countries are as soap conscious as the United States where 288 soap and glycerine manufacturers annually produce almost half a billion dollars worth of toilet and laundry soaps.—*Abstracted from Aramco World.*

Chemical Abstracts

Analysis of Lipstick. John E. Clements (Dept. Health, Educ., and Welfare, Washington, D.C.), J. Assoc. Offic. Agr. Chemists 38, 838-43 (1955).—A procedure for the analysis of lipsticks is presented which seps. the more common lipstick components into the following groups: lakes and fillers, hydrocarbons, ricinoleic acid esters, waxes, and fluorescent dyes. The analysis of 3 com. lipsticks yielded total recoveries of 88-96%. *Thru C.A. 50, 6752e*

Hair Shampoo. Solomon Epstein, Charles F. Fuchs, and Martell M. Gladstone (to Emulsol Chemical Corp.), U.S. 2,733,212, Jan. 31, 1956. Opaque shampoos of good consistency and sudsing properties are obtained by the addn. to the usual detergents of ester-amides of hydroxyalkyl primary amines with normally solid high-mol. fatty acids, e.g. the stearic acid ester-amide of monoethanolamine or monopropanolamine. The additives are obtained by condensing 1 mole of a hydroxyalkyl primary amine with 2 moles of a fatty acid at 160-80° for several hrs. A typical shampoo mixt. consists of: dodecyl Na sulfate 10, stearic acid ester-amide of ethanolamine 2, oleic acid amide 1.5, and water 3.2 parts by wt. *Thru C.A. 50, 506754f*

Phytoncides of Spices. Alois Capek, Prumysl. Potravin 6, 433-5 (1955).—Volatile oils and products of maceration were tested on 5 microorganisms. The oils from cinnamon, sweet marjoram, thyme, laurel, pimento, clove, and coriander showed both bactericidal and fungicidal properties. Anise and fennel oils revealed fungicidal but not bactericidal activities. A slight effect was produced by ginger and nutmeg, while cumin, pepper, and juniper oils were without any effect. *Thru C.A. 50, 504d*

The Effectiveness of Several Mercapto Compounds in Shaping Hair. R. Heilinger (Firma Indola N.V., Hague-Voorburg, Neth.). Seifen-Ole-Fette-Wachse 81, 59-61 (1955); cf. Morelle, Parfumerie mod. 42, No. 21, 51-9 (1950).—The properties, stability of aq. solns., effect on hair, and toxicities of isothiurea, cysteine, thioacetamide, $\text{CH}_3\text{OHCH}_2\text{SH}$, $\text{CH}_3\text{OHCHOHCH}_2\text{SH}$, $\text{CH}_3\text{SHCO}_2\text{H}$, 2- and 3-mercapto propionic acid, $\text{C}_6\text{H}_5\text{SH}$, and other SH compds. are reviewed. *Thru C.A. 49, 15181h*

The Synthesis of Long Chain Fatty Acid Derivatives of Pantothenic Acid. T. Sakuragi and F. A. Kummerow (Dept. of Food Tech., Univ. of Ill.). J. Am. Chem. Soc. 78, 838-39 (1956). The long chain fatty acid derivatives of pantothenic acid, ethyl dipalmitoxypantothenate and ethyl monopalmitoxypantothenate, were prepared. The dipalmitoxypantothenate was obtained as an amorphous fatty powder with a m.p. of 57.0-58.5°, while the monopalmitate was a somewhat waxy substance which had a m.p. of 36.0°. Both derivatives were readily soluble in fats, and showed full activity for rats as a source of pantothenic acid. Evidence was presented to show that the reaction product of pantolactone with ammonia in an aqueous medium was pantamide instead of the ammonium salt of pantoic acid. The synthesis of di-palmitoxypantothenyl palmitate, which melted at 49.0-53.0°, was also reported. *Thru J. Am. Oil Chemists' Soc., 33, 228.*

Exothermically Reacting Mixtures for Permanent Waving of Human Hair. N. V. Industriele Onderneming W. H. Braskamp. Dutch 77,534, Mar. 15, 1955. A small paper bag is filled with a powd.

oxidizing agent, e.g. KMnO_4 . A small piece of flannel is impregnated with an emulsion of glycerol 40, diethylene glycol stearate 10, wool wax or a similar substance with affinity for hair 1, and Na stearate 1 in water 40 parts by wt. By contact of the 2 components, sufficient heat is developed on the hair for permanent waving. The wool wax (or cholesterol or lecithin) is added in order to soften the hair and promote the waving. Dutch 77,621. A quaternary ammonium compd. is added to the above compn. For example, 3 parts of the formic acid salt of a fatty acid ester of triethanolamine or dodecylpyridinium bromide is added. It has a dispersing action, is an antiseptic, and enhances the elasticity of hair. *C.A. 49, 16366b*

Radioactive Soil for Testing Laundering in Home Washers. Florence Ehrenkranz (Iowa State College). Soap, Chem. Specialties 32(3), 41-2, 197 (1956). A method using a radioactive compound in a soiling agent for laundering tests in home washers is described. The data obtained by this method are a direct measure of the amount of the soiling agent removed in laundering. The soil employed was a fatty material with a radioactive component. The kind of soil in the amounts used gave a useful range of values for determining the relative effectiveness of the home laundering procedures investigated. *Thru J. Am. Oil Chemists' Soc., 33, 236.*

Modified Lanolin. L. I. Conrad and K. Motiuk (American Cholesterol Products, Inc.). U. S. 2,725,334. Lanolin is chemically modified, especially for pharmaceutical and cosmetic use, by acylation of 50 to 100% of the hydroxyl groups in lanolin with acetic anhydride, propionic anhydride, ricinoleic acid or benzoic anhydride. The excess reagent is washed out and by-products are removed by distillation in vacuo. The product is practically colorless and completely soluble (up to 10%) in mineral oil at 25°C. without the addition of a stabilizer. *Thru J. Am. Oil Chemists' Soc., 33, 85 (1956).*



Aerosol NEWS

by Dr. Winston H. Reed

Here Goes!

It was a real pleasure and an honor to be asked to write a column on Aerosols by the American Perfumer & Aromatics. It will be our objective to make this section informative, timely and occasionally we hope amusing. Success in this objective will be indicated by your comments and we will be glad to hear comments or suggestions either in regard to this column or to points that you feel may be of interest to those working in aerosols throughout the world.

Summertime Aerosols.

The hot, dry summer in the East may be withering the gardens but it should cause the pressure packed suntan lotions to bloom. More varieties are on the market this year. The laconic comment of a Cape Cod druggist: "They sell!" Pressurized creams and lotions are also moving well.

The idea of a charcoal spray, or charcoal lighter, which many thought was not so hot, begins to look like a very solid merchandising idea. The backyard barbecues and campsites offer a good rate of use spot for this item, which one now sees liberally displayed in stores throughout the vacation centers, at least in the East. My guess is that these lighters will show a healthy growth gain this summer. More promotion will be used to push them next year. Some are hickory scented but we expect other odors will be forthcoming, following the I-Pine-4-U and Bal-som motif of the old summer camps.

Echos and Re-echos.

July Aerosol Age comments on the problems of the C.S.M.A. Openhouse and we echo their opinion. This industry is getting to the point where the Convention will have to be a little more of a Convention and a little less of a fourteen mile hike around hotel corridors, interspersed with long waits for overcrowded elevators. I also like the idea of having signs out in the hotel corridors so that the rooms can be spotted easier. Why can't one or two floors be taken solid, or use the ballroom with booths along the side, as has been suggested by others? The Convention Committee has been doing a bang-up job, but the rate of growth of the C.S.M.A., under the able guidance of "Doc" Hamilton, has been so fast that it has brought with it unprecedented problems.

The Florida meeting next December should be very well attended. Let us

hope everyone with a useful suggestion, regarding the Openhouse, will send in his two-bits on the subject so the May Meeting next year can be improved.

Food Aerosols.

It is a safe bet to say there are no busier beavers than those now working quietly away on the many problems involved in the development of satisfactory food aerosols. Newcomers to the field get the idea that this is a new and completely unexplored territory. 'Tain't so! Both liquefied and non-liquefied gases were tried with many types of food products, such as ketchup, mustard, pancake batter, etcetera, five, six and seven years ago, but the results were far from satisfactory for many reasons. The industry has been moving along, and the development of new valves, better containers, and improved processing techniques, now makes it feasible to tackle these problems with more hope of success than was previously enjoyed. This field, when developed, will make the present aerosol sales figures look very anemic in respect to total volume. Our bet is that aerosols will eventually revolutionize the flavor and condiment industry. Gourmet foods and novelty packages may offer best initial high profit market.

Had a most interesting talk the other day with Harvey Tull, of Crown Can, who is sold on the future of food aerosols. Equally avid support for pressurized food products can be found in Earl Graham, of Crown, Bob Hollister, of American Can, and some of the Continental Can people.

Uncoated vs Coated Glass Aerosols.

Jack Pickthall, in his reports on the safety of coated vs. uncoated glass bottles, has stirred up quite a boiling discussion in the trade. Maria Weiner, in the July Aerosol Age, gives some of the arguments on the side of the uncoated glass aerosol. Maria rests her case on the rather solid foundation of thermodynamics and I am in quite substantial agreement with her argument. Essentially, her thesis is that the amount of gas or energy available for flashing is reduced sufficiently so that there is not too large an amount of gas with available energy to produce any explosive effect, or that the volume increase is not too great. This argument may last for some time since there are good points on both sides and there are definitely areas where each type of package is usable and safe.

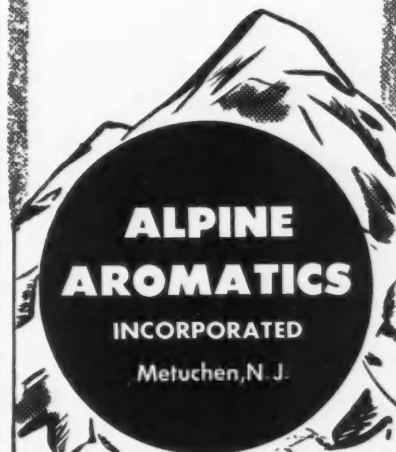
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Cheerfulness
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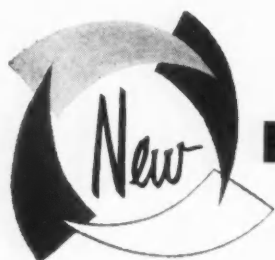
NEW SYNTHETIC
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of Alpine Research.

May we sample you?





PRODUCTS & IDEAS

STANDARD TAPER SLEEVE

The Arthur F. Smith Co. announces a new development in the field of jointed glassware with the availability of the "Quorn" standard taper sleeve. The new sleeve, according to the firm, completely eliminates the problem of joint seizure, and precludes contamination due to stopcock lubricants and leaking ground joints, providing a vacuum-tight seal without the necessity of greases of any kind. Consisting of an elongated cone of polytetrafluorethylene film .003" thick, the sleeves are tapered to fit tightly over ground glass cones in sizes from 10/30 to 55/50 inclusive. They are completely inert chemically except in the presence of metallic sodium, and are self lubricating. The sleeves are reportedly heat resistant in a temperature range from -75 degrees C. to 300 degrees C. They are priced from \$1.50 to \$3.10 each, depending on size of taper.

TRANSISTORIZED RELAY—1

Fisher Scientific Co. has produced the lab world's first transistorized relay, according to a statement by the company. In field tests the relay has switched a 4.5-ampere load on and off some 5,000,000 times, without signs of wear. Reportedly, its three tiny germanium junction-transistors last indefinitely as long as the relay



1.

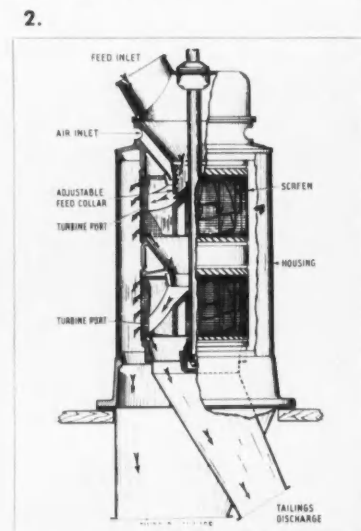
is used within its rated limits. The relay uses 115-volt 50-60 cycle a-c. The price is about \$65.

READING PROGRAM

The Reading Laboratory, Inc., is offering a rapid reading program designed to increase reading time from less than 200 words per minute to more than 800 words per minute, at the same time improving powers of comprehension and understanding. This program is designed for integration into company training programs and comes complete with mechanical training aids, all necessary individual forms, test booklets, work books and leader training manuals. It is a ten-hour course, projected to produce an average improvement of 50% with individual gains to 150%.

TURBO SIFTER—2

The Abbe Engineering Co. has designed and manufactured an improved Turbo Sifter which they claim is sifting face, talc and baby powder from 2 to 10 times faster than conventional methods. Operating at relatively high speed, the Abbe Turbo Sifter employs centrifugal force developed by its rotating turbine to spray the powder uniformly



2.

against the entire surface of the cylindrical sifting screen which surrounds the turbine. The "fines," or sifted powder, pass through the screen and are automatically discharged into bags or receptacles for packaging, while oversize particles and foreign matter are discharged into "tailings" bags. Turbo Sifters are available in three sizes with capacities from 30 to 6,000 lbs. per hour.

DEMINERALIZER—3

A self-operating ion exchange water demineralizer is now being offered by Crystalab. Deeminac Model SD-326 operates unattended. For highest ionic purity, unit operates as shown—2 or 3 quarts per hour. For hurried requirements, a gentle squeeze on the polyethylene bottle will accelerate the flow. Deeminac comes complete with quart size demineralizing unit, metal holding stand and quart size graduate with tight fitting cover. Ion exchange resins in the filter turn from blue to brown to indicate exhaustion. A new filter can be plugged in instantly. Deeminac complete, \$6.95. Replacement filter, \$4.00.



3.



GARDEN TRYST

A FRITZSCHE "EXCLUSIVE"

Do you know of any spot more lavish with beauty, more peaceful, more conducive to serenity of mind and spirit than the restful seclusion of a country garden with its mingled scents and hospitable garden bench beckoning one to indulge its tempting pleasures? Because its fragrance has something of the allure and enchantment of such a spot, we have named our present perfume offering GARDEN TRYST. We believe you'll love it! For one thing, you'll delight in its fresh, softly delicate, caressing character. You'll like the smooth, well-rounded, "green" muguet effect it imparts—an effect derived from its nicely balanced blending of lily, jasmine, rose and other florals. You'll like, too, its excellent tenacity and total lack of harshness. GARDEN TRYST makes beautiful finished extracts, delightfully scented colognes and toilet waters, and with slight modification for cost can also be used in a companion line of cosmetic products. If you'd like to examine GARDEN TRYST, we shall welcome your request for a trial sample.

CREATORS of MADE-TO-ORDER FRAGRANCES
for PERFUMES, TOILETRIES and COSMETICS

ODORANTS and DEODORANTS for INDUSTRIAL and TECHNICAL USE

SUPPLIERS of AROMATIC CHEMICALS, BASIC
PERFUME and FLAVOR RAW MATERIALS

FRITZSCHE

Established

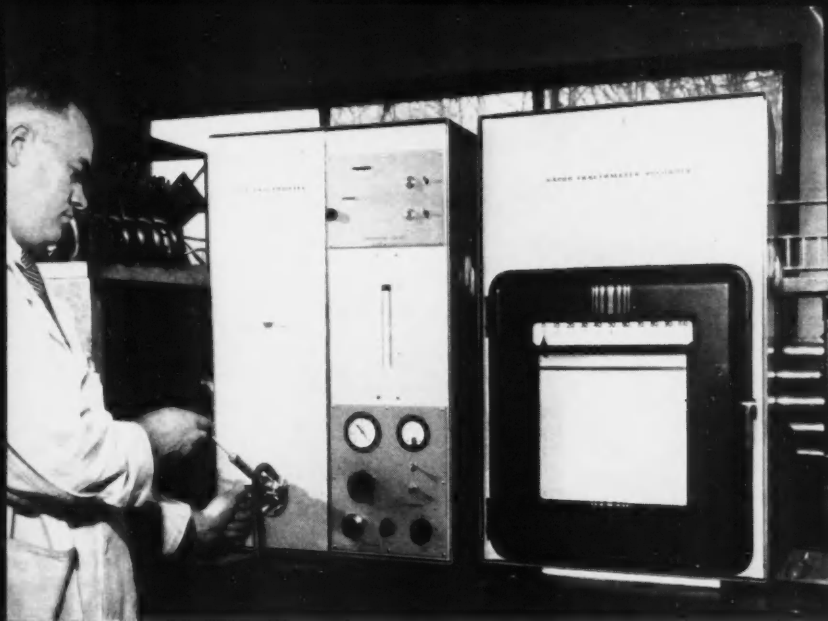


1871

Brothers, Inc.

PORT AUTHORITY BUILDING, 76 NINTH AVENUE, NEW YORK 11, N. Y.

BRANCH OFFICES and STOCKS: Atlanta, Georgia, Boston, Massachusetts, Chicago, Illinois, Cincinnati, Ohio, Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, Montreal and Toronto, Canada and Mexico, D. F. FACTORY: Clifton, N. J.



THE newest of instruments developed for the examination and evaluation of essential oils is the Vapor Fractometer and Recorder, shown above. The operation of this unit is, in principle, a chromatographic separation carried out in vapor phase. While its potentialities have not yet been fully explored, techniques are now being developed which will make this instrument adaptable to all types of essential oil analyses. We expect much from this new approach to the study of these basic materials and it is our opinion that accomplishments to date represent but a "scratching of the surface" of possibilities inherent in the fascinating work of our Instrumental Laboratory—an augury of considerable promise to those customers whose finished goods already benefit from the superiority of the FRITZSCHE products they now employ.

FRITZSCHE

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UM-M-M, BOY!
THAT'S REALLY
GOOD!

Don't ever worry about your product's flavor if, in general, it evokes such gratifying approval. But let it be a frown, a turned-up nose, or a blunt refusal to accept and you'll know then that your drug or proprietary is in for

certain trouble. That is why leading pharmaceutical houses, today, take no chances on any of their new products failing to meet the acid test of palatability. Junior taste panels, as well as the opinions of flavor experts, are often called upon to guide them in their product evaluations. In this way they effect needed taste improvements *before* such medicinals are marketed. Thus, they choose the safe, sure way to gain a friendly and continuing market for their product once it becomes available for retail distribution. Our laboratories, plant facilities and experience are at the disposal of any firm seeking such specialized assistance. For a preliminary and confidential discussion of your problem, address our Pharmaceutical Flavor Division on your letterhead.

For GOOD TASTE

in Pharmaceuticals Consult...

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BRANCH OFFICES and *STOCKS: Atlanta, Georgia, Boston, Massachusetts, *Chicago, Illinois, Cincinnati, Ohio, Cleveland, Ohio, *Los Angeles, California, Philadelphia, Pennsylvania, San Francisco, California, St. Louis, Missouri, *Toronto, Canada and *Mexico, D. F. FACTORY: Clifton, N. J.

Craftsmanship

**AN INTEGRAL PART OF THE CONTAINER
WHEN MARYLAND GLASS TAKES
OVER YOUR DESIGN PROBLEM!**

When you drop a packaging problem in our lap, the end result is more than a glass container. It is an *idea* . . . born of restless imagination, shaped by skilled hands, backed by years of sound experience. Our creative staff gives you a selling package that packs well, ships well and pushes your product on the shelf. For a successful solution to your design problem, contact MARYLAND GLASS CORPORATION, 2147-53 Wicomico St., Baltimore 30, Md.



STOCK DESIGNS

—A variety in blue or flint glass and a complete range of sizes is ready for immediate shipment.

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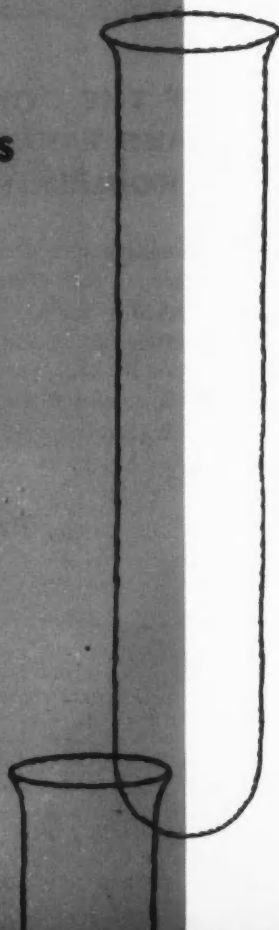
Maryland Glass

**BLUE OR FLINT
JARS AND BOTTLES**



for
Perfume Materials
that meet your
product's
requirements
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service to assist
or supplement
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**COMPLETE
AEROSOL
TESTING
LABORATORY**

Flavor Developments

1957



MORRIS B. JACOBS, Ph.D.

The Seventeenth Annual Meeting of the Institute of Food Technologists was held from May 12 to May 16 in Pittsburgh, Pa. While no session of the 20 sections was specifically entitled as a flavor section, it is interesting to note that of the 136 papers presented at this meeting some 25 were concerned directly with flavor and taste aspects of food not including the use of preservatives, antioxidants, antibiotics, or other additives.

One development to be noted is that some thirty of these papers were presented by personnel of the various branches of the United States Department of Agriculture, mainly by the Eastern and Western Utilization Research Branches, Agricultural Research Service, at Philadelphia, Pa., and Albany, Calif., respectively. For comparison, some 45 were presented by personnel of the various Universities and colleges, 25 by firms and consultants, 13 by State and other agricultural stations, 5 by the Quartermaster Research and Development Center, and 2 by the United States public Health Service.

It would be impossible to cover all of the papers so only a few will be considered here.

Enzyme Flavor Enhancement

Readers of this column may recall that on several occasions I have written about the use of enzymes to enhance flavor and pointed to the work of Hewitt, Mackay, Konigsbacher, and Hasselstrom sponsored by the Quartermaster Research and Development Center. In this connection, S. David Bailey, Quartermaster Research and Development Center, Natick, Massachusetts presented a paper on a method of enhancing flavor enzyme systems. Bailey stressed that the role of enzymes in the release of natural flavors in foods is one of interest to the Quartermaster in supplying acceptable rations for the Army supply system. He recalled that preliminary studies that were made last year indicated that some promise could be held out for the proper utilization of enzymes at the time a food is prepared for consumption. He described the preparations used in the extraction of crude enzymes for use in flavor propagation and also described the procedure for the preparation of the necessary precursors on which the enzymes have to act in order to reproduce the natural flavor. His studies showed that the pH of the enzyme precursor reaction is important in the release of the maximum amount of natural flavor. He indicated that there was considerable promise that physical-chemical methods could be used to

Wide range of topics of interest to all in the flavor field covered in papers presented at various national meetings

demonstrate the release of flavors by enzymic action without the need of sensory panel testing.

Flavor of Maple Sirup

From time to time I have discussed the topic of maple flavor and in such reviews have considered the work of Willits and his collaborators. Lawrence L. Reed, J. Naghschi, and C. O. Willits in a continuation of the work of Willits on maple sirup covering many years presented a paper on the relationship between the type and origin of reducing sugars in sap and the color and flavor of maple sirup. These investigators noted that maple sirup made from early cold weather sap flows or from sterile sap has a light amber color and a delicate maple flavor whereas sirup made in the late season or from nonsterile sap usually has a caramel-type flavor and a dark amber or brown color both of which decrease the value of the sirup. Their analyses indicated that with increasing amount of caramel flavor and increasing amount of color there was a concomitant increase in the amount of reducing sugar. One of the objectives of this work was to ascertain the effect of the type and the origin of the reducing sugars in the maple sap on the formation of caramel flavor and color in the maple sirup produced from the sap.

These investigators have shown that maple sap freshly drawn from the tree contains no hexose sugars and that these are formed as a result of microbial fermentation. To find out the specific effect of various sugars, they added crystalline glucose (dextrose), fructose (levulose), and maltose, and reducing sugars obtained from disaccharides by enzymic and ion-exchange resin hydrolysis to sterile sap prior to concentration to sirup by boiling. Subsequently the sirups produced were evaluated as to caramel flavor and color and then correlations were made with type of sugar, form of sugar, that is whether furanose or pyranose type, and the flavor and color produced.

Pineapple Juice Powder

G. K. Notter, D. H. Taylor, and J. E. Brekke of the Western Utilization Research Branch, Agricultural Research Service, U. S. Department of Agriculture, Albany, Calif. presented a paper on a method for the preparation of a pineapple juice powder from a commercial concentrate. In the method they developed, a 47 deg. Brix concentrate can be dehydrated in a short period at a pressure of 2 mm. and a final product temperature of 150 deg. F. to give a high-quality product. They suggested that the moisture level in the packaged powder could be reduced by in-package desiccation from 2.5 to 1 per cent in less than three months by storage at progressively higher temperatures as the moisture decreases. They investigated storage temperatures, atmospheres in the packages, and the effect of sulfur dioxide.

Onion and Garlic Pungency

There has always been interest in the evaluation of the pungency of onion and garlic. Lionel Farber of the George Williams Hooper Foundation, University of California, San Francisco, California discussed this topic in a paper entitled, chemical evaluation of the pungency of onion and garlic by the content of volatile reducing substances. In the opinion of Farber, the volatile reducing substances content is a quantitative measure of the pungency of raw and dehydrated garlic and onion. Consequently the determination of this value gives a means of comparison of different samples of varying pungency. He determined such factors as aeration time, concentration of the potassium permanganate oxidizing solution, boiling time for preparation of the extracts, and the presence of sulfur dioxide on the recovery of volatile reducing substances.

Glucose Oxidase

In a previous section I noted the use of enzymes for the development of natural flavor. The wide utilization of enzymes in various flavor applications can be also illustrated by the use of glucose oxidase in the protection of the flavor of foods and beverages against oxidative deterioration. R. R. Barton, S. S. Rennert, and L. A. Underkoffler, Takamine Laboratory Division of Miles Laboratory, Clifton, N. J. discussed this topic.

Glucose oxidase catalyzes the oxidation of glucose by molecular oxygen hence foods and food products that are subject to deterioration because of the presence of glucose may be protected against such undesirable changes by the enzymic oxidation of the glucose before packaging or drying. Foods and beverages that are likely to spoil as a result of oxidation by the air of the container may be protected by the removal of the residual oxygen from the container by the use of glucose oxidase. These investigators presented data showing how certain foods and beverages were protected against oxidative deterioration by means of glucose oxidase. Both hydrated and dehydrated foods were subjected to this treatment.

Coffee

Two papers concerning coffee were on the program. In one of these on the storage properties of vacuum-packed coffee by M. C. Merritt, B. A. Cawley, E. E. Lockhart, B. E. Proctor, and C. L. Tucker of the Department of Food Technology, Massachusetts Institute of Technology, it was shown that brews prepared from coffee, vacuum-packed and stored at -20 deg. F., 36-40 deg. F.,

68 deg. F., and 99 deg. F., over a period of 27 months had no significant flavor change at any temperature.

Frederick R. Greenbaum, Kwik Kafe Coffee Processors of America, Inc., Hatboro, Pa. discussed some newer chemical views of coffee. He recalled that Swiss chemists had shown that the aroma of coffee is composed of over 70 different components and that nine organic acids are present in coffee, chlorogenic acid being considered the most important.

Strawberry Aroma

The American Chemical Society held its 131st National Meeting at Miami, Florida in April. Several papers of interest to flavor chemists were presented at this meeting. K. P. Dimick and Joseph Corse disclosed some additional work they have been doing on strawberry flavor in which field Dimick now holds a preeminent position. They found that strawberry aroma can be collected as an acid-free fraction boiling in the range from 130 to 270 deg. C. They were able to recover about a gram of this oil from a ton of the fresh fruit. They expressed the opinion that over 70 components are to be found in the aroma oil of strawberries and they indicated that vapor phase chromatographic methods and other separation techniques may be useful for the separation of a number of these components. Dimick and his coworkers indicate that this type of work will lead to more standard strawberry flavored products and to improved strawberries.

Flavor of Milk

Each year the Borden Award in the Chemistry of Milk is presented at a meeting of the American Chemical Society. At the Miami meeting it was awarded to Stuart Patton of the Department of Dairy Science of the Pennsylvania State University. Patton gave an address on the organic chemical effects of heat on milk. This paper was principally concerned with the flavor effects of these chemical reactions. Patton indicated some of these effects are favorable and some as not desirable.

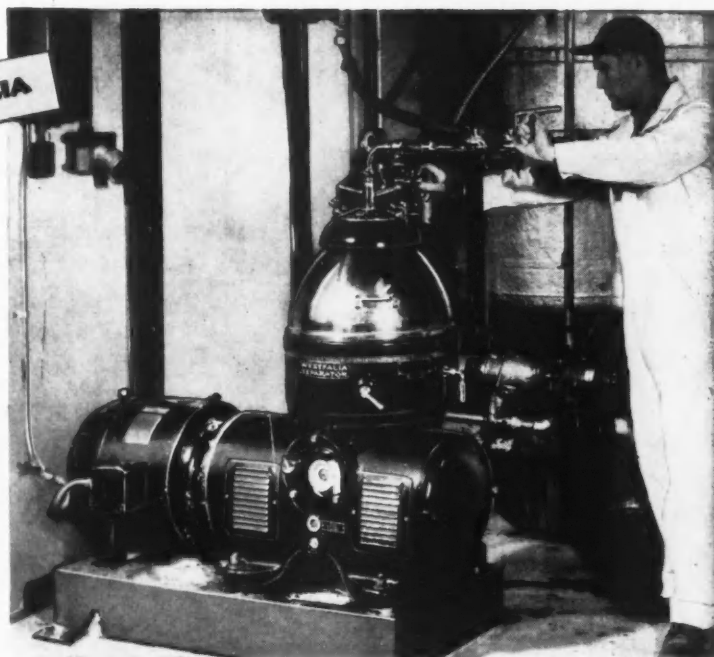
He pointed out that when milk fat is heated or stored either as milk, itself, or as ingredient of a milk product, delta-decalactone a compound having a marked buttery, coconut-like flavor and odor, is produced. It is his opinion that most of the palatability of foods cooked in butter is derived from this compound.

When this compound is present in dry whole milk, on the other hand, it is a cause of lack of acceptability of the product. Patton stated that the origin of this lactone in milk fat has not been established but he thought that a plausible source might be 5-hydroxydecanoic acid. He indicated that milk fat may contain traces of an ester of this acid which as a result of heat treatment or storage might possibly rearrange itself spontaneously to the lactone or the compound might be formed as the result of some unique autoxidation reaction.

Patton also called attention to his work on the isolation of a group of methyl ketones, specifically acetone, 2-pentanone, and 2-heptanone, as trace components in heated milk. These compounds were isolated by distillation at low temperatures under reduced pressure, that is at 40 deg. C. and 10 mm. Hg pressure. He thought that other members of this homologous series might also be present. These compounds may be the cause of flavor defects of certain dairy products. Patton stressed that the field of flavor chemistry of milk and of milk fat, particularly, has barely been scratched and that work in this field would be rewarding.

The Trend is to **WESTFALIA**

Why Do Process Engineers in the Flavoring Extract and Essential Oil Industry Select **WESTFALIA** KG Clarifiers?



Recently installed at the Boonton, N. J. plant of Norda Essential Oil & Chemical Company, this WESTFALIA KG-4006 clarifies emulsified flavoring extracts prior to spray drying. Norda also uses a dolly-mounted WESTFALIA model KG-2006 to clarify depectinized fruits.

More and more, plant managers and process engineers in the flavoring extract and essential oil industry are turning to WESTFALIA KG clarifiers as a vital part of their expansion and modernization programs.

Here are a few of the progressive organizations which are realizing new economies and greatly increased output with the WESTFALIA KG clarifiers, while assuring their customers of products with unsurpassed quality: POLAK & SCHWARZ, INC., Teterboro, N. J., producers of true fruit extracts and vanilla concentrates for the beverage, ice cream and food industries; MAGNUS MABEE & REYNARD, INC., New York, N. Y., internationally famous in the field of essential oils, concentrated flavors and basic perfume materials; NORDA ESSENTIAL OIL & CHEMICAL COMPANY, Boonton, N. J., manufacturers of fruit flavors, concentrates, extracts for the exacting requirements of the food and beverage industries.

Why the widespread trend toward the WESTFALIA KG clarifier?

- *First, constant high efficiency – the efficiency of the WESTFALIA clarifier is just as high at the end of the cycle as it is when the bowl is empty.
- *Second, the extremely large solids-holding capacity of the unique multi-chamber bowl allows the operator to run the machine for longer periods of time before bowl cleaning is necessary.
- *Third, the KG removes *only* undesirable solids, and retains full aroma and taste of the product.

The essential oil and flavoring extract industry is only *one* of the many fields where the KG clarifier is increasing efficiency and economy. The WESTFALIA KG is now being used more and more widely in the general chemical industries, in production of pharmaceutical and biological products, and in a wide range of food and beverage industries.

Won't you let us help you with YOUR liquid clarification or solids recovery problem?

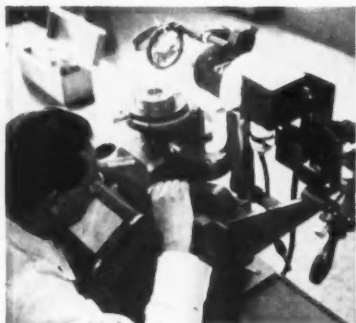
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Co-ordinated Research

Pure research into formulae and fabrication of glass, *packaging research* into processing and handling methods in customer plants, and *market research* into consumer attitudes, add up to greater specific value for your packaging dollar.



Engineered Design

The package that takes your product to market must take *three* needs into account. Considerations of its function in the retail store, its operating efficiency and its consumer utility all become a part of the prescription for an Owens-Illinois package.



The Right Container

Versatility of facilities and talents points to Owens-Illinois as your best source of supply for a wide range of specialized needs: containers where beauty, utility and tradition are blended in the proportions required by different product classifications.

Meet a couple of



COMPLETE PACKAGING APPROACH



The Right Closure

Know-how as to the best available liner and closure—best for packing, displaying, or using a specific product—may well be one of the most important single points through which expert packaging counsel will reward you many times over.



Needed Fitments

With emphasis on the word "needed," Owens-Illinois specialists are keenly aware of sales benefits possible through use of plastic shaker and pour-out fitments which are not "gadgets" but which increase consumer satisfaction with your product.



Merchandising Cartons

Modern cartons are developed only through systematic consideration of their opportunity to serve you in the retail store and retail warehouse as well as on your own filling line and in transit. Owens-Illinois is pioneering such developments.

f beautiful sales ideas!



*Your special products are sure
to get more attention, more sales
in containers like these!
Custom-made for you by Owens-Illinois*

A container that matches the appearance and convenience of these Owens-Illinois custom designs is a sales idea in every sense of the word!

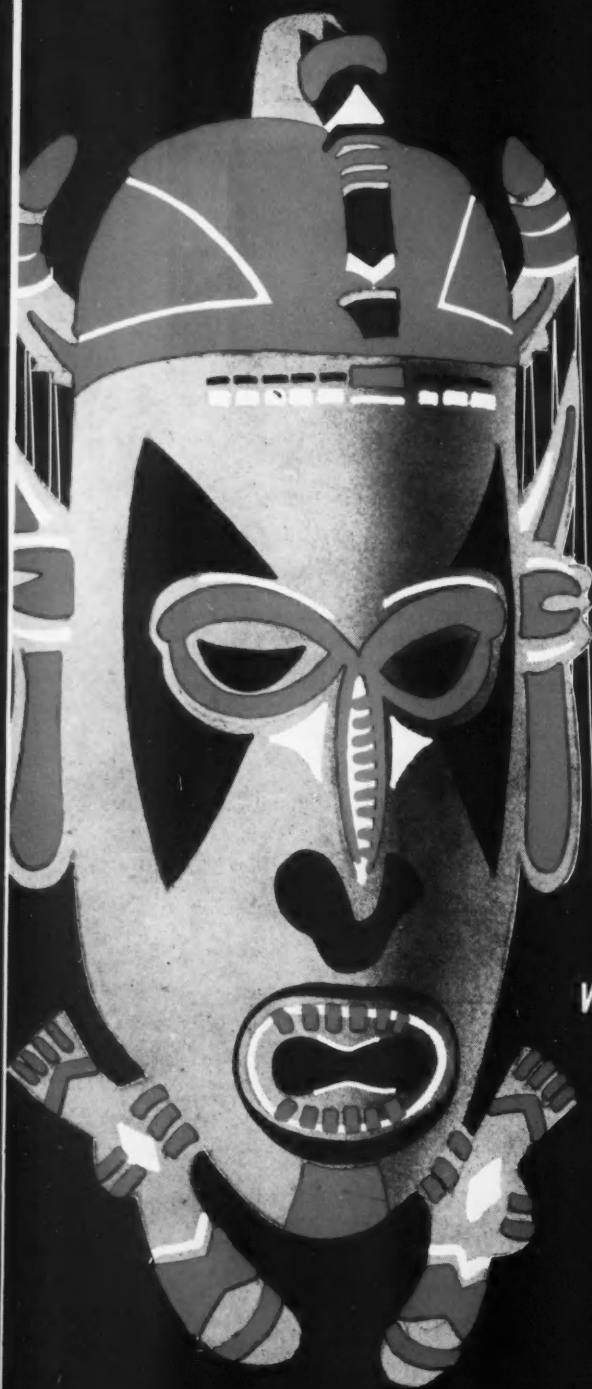
Handsomely formed, such a container draws the customer's eye—quickly creates a favorable over-all impression—makes a strong promise for the character and quality you have given your product. *Intelligently designed*, it makes your product easy to use, keeps it fresh from first use to last—and thereby aids measurably in building repeat sales.

Such containers have long been a specialty at Owens-Illinois . . . developed for packagers by the experienced designers and packaging experts that staff the O-I Container Design Service.

So whether you need a custom-designed container or help in the selection of a stock mold—call on Owens-Illinois. Here, you have a marketing-minded supplier for your complete salespackage—from glass container, through fitments and closures, to the final carton.

DURAGLAS CONTAINERS
AN **Ⓢ** PRODUCT

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WAVEMASK 30

works magic with home permanents

The new Synfleur fragrance WAVEMASK 30 can help cure even your most difficult case in home permanent formulation.

WAVEMASK 30, based on essential oils and aromatic chemicals, carefully tested for stability, compatibility and solubility, is an artistic formulation developed out of long and intensive Synfleur research.

In practical application, it has proven itself as practically a panacea to cold wave preparation odor problems. Additionally, it can be adapted as a basic fragrance for effective use in other thioglycolate products requiring similar masking treatment.

The Synfleur laboratories staff will be glad to assist you on your masking problems with samples, data or other help, without obligation.

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SCIENTIFIC LABORATORIES, INC.
MONTICELLO, N. Y.

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Managua • San Jose • Panama • Barranquilla • Medellin • Bogota • Caracas • Maracaibo • Rio de Janeiro • Buenos Aires • Santiago

News

and Events

Simulated Flight to Paris Launches Ciro's '57 Collection

A simulated flight to Paris with models in an appropriate tableau with backdrops was effectively employed by Ciro Parfums to depict its new '57 collection of four fragrances: Danger, Reflexions, Surrender and New Horizons. Don Bryant, president of Ciro and E. T. T. Williams of the parent company, Warner Lambert Pharmaceutical Co. both made telling addresses. The successful presentation was arranged by Alice Dowd.

National Beauty Trades Show in New York Oct. 7-9

The eighth National Beauty Trades Show will be held at the Hotel Statler, New York, Oct. 7, 8 and 9 under the co-sponsorship of the National Beauty and Barber Manufacturers Assn. and the National Hairdressers & Cosmetologists Assn.

Pharmaceuticals Inc. Taking Over J. B. Williams Co.

The 117 year old J. B. Williams Co., Glastonbury, Conn. is being taken over by Pharmaceuticals Inc. subject to approval of Williams stockholders which is considered favorable. The purchase price is reported to be about \$5,400,000. Pharmaceuticals was founded in 1935 and its sales are said to be about \$30,000,000 annually. Sales of the J. B. Williams Co. in 1956 were \$8,912,723. C. T. Lipscomb, one of the most alert men in the industry, is president of the J. B. Williams Co. It is planned to continue the present management of the J. B. Williams Co.

Lanvin to Spend \$1,200,000 for Advertising this Year

Lanvin Inc. is planning to spend a total of \$1,200,000 for the year in all types of mediums to promote its perfumes.

Lenthéric Launches Promotion With Trip to Paris Prize

An unusual but cleverly conceived prize contest to promote Tweed fragrance preparations began August 12 when Lenthéric announced the details.

The contest is based on an unfinished jingle to which the contestant adds the last line. Over 3 million contest entry blanks have been distributed throughout the country. To enter the contest Lenthéric specifies a unique qualification. The entry blank must be sprinkled or sprayed with any one of the following Tweed preparations: hair spray, bouquet, bath powder or soft fragrance.

First prize is a round trip by airplane for two to Paris, 15 days at the Hotel Claridge, a \$6,000 mink coat and \$500 for spending money. In addition to the first prize there are 419 other lavish prizes and 2,500 surprise gifts to the first 2,500 entries.

Fragrance Foundation Annual Convention Sept. 17

The Fragrance Foundation Inc. will hold its eighth annual convention Sept. 17 in the Park Lane Hotel, New York. The meeting will be open to all concerned with the fragrance industry. Joseph A. Danilek, president of Mary Chess Inc. is the convention chairman. The business meeting will be held from 10 to 10.30 a.m. and will be open only to members. It will be followed by an open meeting, a cocktail reception and luncheon. There is no registration fee. Registrations may be made through the Fragrance Foundation, 1 E. 53rd St., New York 22, N.Y. Eldorado 5-3168.



Cosmetic executives and scientists of the Society of Cosmetic Chemists boarding the plane at Idlewild airport for a tour of technical and scientific conferences in Paris, London and Geneva. The tour was arranged by World Travel Plan Corp.



Smith L. Rairdon (right), vice president and director of marketing of Owens-Illinois Glass Co., presents a litterbag to Vice President Richard M. Nixon on behalf of Keep America Beautiful, Inc., at the national convention of U. S. Junior Chamber of Commerce in Milwaukee, Wis. Looking on at left is Wendell Ford, president of the Jaycees, whose convention theme is "Jaycees believe in clean communities." Mr. Rairdon is chairman of the board of KAB. Inscription on the litterbag reads, "Don't be a litterbug!" The Vice President and Mr. Rairdon both addressed the 1957 Convention.

Charles of the Ritz Wins Flower Contest

Miller & Rhoads in Richmond, Va., had a Garden Club flower arrangement contest tied in with their June Beauty Week. Twenty clubs were selected, each to make a flower arrangement based on a perfume. These arrangements were displayed with the perfumes they represented. Directoire by Charles of the Ritz took first prize.

SCC Group Now in Paris

Under the sponsorship of the SCC, a large group of cosmetic chemists left the United States July 27th, with the first stop, Paris, where the Societe Francaise de Cosmetologie arranged a meeting. At the invitation of scientific and technical groups abroad, the SCC group participated in Symposia in London, Geneva and Paris.

Degree of Master of Science Conferred on M. G. deNavarre

The host of friends of Maison G. deNavarre will be interested to know that



Maison G. deNavarre

he now has a Master of Science degree from Wayne University. He was one of six on whom the Master of Science degree was conferred on the evening of June 13. The graduating class numbered 1,300. Among the other earned degrees conferred were 24 Doctors of Science or and Education and 250 who were awarded their Masters Degrees. It took Mr. deNavarre five years of study to complete the work required for his degree and the subject of his thesis was "The Interference of Nonionic Emulsifiers with Prevervatives." The graduation exercises took place in a full auditorium at the State Fair Grounds Coliseum in Detroit.



Houbigant Sales Corp. recently held its annual sales meeting at the Sheldon House, Pine Orchard, Conn. Executives and sales representatives from the United States and Canada attended.

New merchandise for fall and Christmas was unveiled by Pierre Harang, vice president and director and H. T. Georgi, sales manager.

Advertising plans were discussed, which includes twenty-five ads on a new perfume presentation to appear in Charm, Glamour, Mademoiselle, Harper's Bazaar, New Yorker, Vogue, Esquire, Holiday and Sports Illustrated.

Louis Rosen, Canadian sales representative, was awarded a watch.

Adolph Schwarz Announces New Spray Dryer



Adolph Schwarz

Adolph Schwarz, president of the Polak & Schwarz world organization, has taken the occasion of his recent visit to New York to announce the beginning of operation of its new Niro spray dryer. This spray dryer is housed in a wing of the recently completed addition of its flavor manufacturing plant at Teterboro, N. J.

Mr. Schwarz, in making this announcement, stated that he believed the many years of experience gained in Europe in the spray drying field, where Polak & Schwarz was one of the pioneers, plus this most modern equipment, incorporating all the latest improvements, will serve to advance his firm in the powdered flavor field.

Tinkerbell Creates Six New Items

Six new items have been created for the summer and fall collections of Tinkerbell Toiletries for children. For the summer season, Bath-O-Clock and Party Favor. In the group for fall: Princess Package, Bow Box, Calico Set and Gingham Set.

Film Produced by Procter & Gamble

The film entitled "The Quiet Crowd" is being produced as a public service by The Procter & Gamble Co. and is being offered to Community Chests and similar organizations through the United Community Funds and Councils. Community Chest and United Fund drives all over the country will be able to obtain free of production cost a film designed to strengthen their fund-raising campaigns.

New Cosmetic Book Published

Interscience Publishers, Inc., have announced for publication approximately Sept. 15, a new book entitled "Cosmetics: Science and Technology." This book has been edited by Edward Sagarin, Dr. Emil Klarmann, Dr. D. H. Powers and H. D. Goulden, and contains chapters on all important products or groups of products in the industry prepared by carefully selected experts on the materials involved.

Luba Tavor Forecasts Packaging Revolution

Luba Tavor, designer of packages for the cosmetic trade, visualizes new trends in this field which will bring about considerable changes in general approaches to the problems, as well as structure and surface design.

According to Mr. Tabor, "Because plain printed foil became package wraps for low-priced mass products, cosmetic manufacturers will use embossed foils exclusively, with the major area printed solid in opaque subdued colors. Effects will be enhanced by having a few spots of heavily embossed virgin foil break through the design and lettering, thereby achieving the distinction and elegance essential in every cosmetic presentation. Thus, they will be strategically and advantageously set off from the general line-up of gaudy, unembossed foil boxes which flooded the shelves during the past few years."

"Gadgety, special-event packages such as those for Mother's Day, Valentine's Day, etc. are destined to decline; instead there will be special promotion constructions permitting combination

and multiple sales, thereby conforming with current merchandising practices in any other trade these days."

"Duplex foil will be employed to brilliant advantage in combination with transparent plastic components; here we can look for many new luminous effects."

"Rumors are going the rounds that certain houses may experiment with surrealistic and abstract motifs. Such designs, executed with taste and in avoidance of eccentricities, could be, perhaps, successful. In any case, such a bold venture would be worthwhile for it would help emancipate packaging decor from the limitations of traditional ornaments. Such a break-through could clear the way for uninhibited inspirations and possibly will open new avenues in packaging surface design."

Podbielniak Institute Announces Class Schedules

The Podbielniak Institute of Chicago has announced 1957-58 class schedules on Vapor Phase Chromatographic Techniques and Low and High Temperature Distillation. This new schedule, which may be obtained from the Institute, will be conducted during four "two week" sessions during 1957-58.



Mennen Baby Products and Filene's played host to Boston's Ladies-in-Waiting with an afternoon of entertainment and education for expectant mothers. As a preview of the shape of things to come, every Lady-in-Waiting who attended the event received gifts for her expected heir, including Mennen Baby Products. The Boston show was the second in a series of national events Mennen is planning to "show every expectant mother how she can continue to be the active, attractive, and important person she was before she became a Lady-in-Waiting."

Thirty Years in the Perfumery Industry

It was thirty years on June 1, 1957, since Yves-Rene Naves first entered the service of the Perfumery Raw Materials Industry, which he has marked so strongly with his realisations, doctrinal views and personality. His friends, colleagues and collaborators did not want to leave such a milestone unnoticed.



Dr. Yves-Rene Naves

Yves-Rene Naves was born in 1902 in Auch, capital of Gascony. He went to college at Saint-Germain-en-Laye, near Paris, then started attending the University of Paris, but most of his higher studies were accomplished at Toulouse University. Having the degree in chemical engineering (cum summa laude) of the Institut de Chimie of Toulouse, known today as the Ecole Nationale Supérieure de Chimie, he entered the laboratory of Paul Sabatier, Nobel Prize Winner in 1912, and in July 1925 upheld his thesis presented for a doctor's degree in science. The grounding which he had

received in the illustrious chemist's laboratory so strongly marked Dr. Naves that on the celebration of the Paul Sabatier centenary, in 1954, by the Academy of Sciences, the French National Centre of Scientific Research and the University of Toulouse, Naves was chosen, with two other former pupils, to discuss the works of Paul Sabatier, their teachings and their consequences.

From November 1925 to May 1927, Y.-R. Naves accomplished his active service in the French Navy, finishing first of his class in May 1926 at the Naval School and first of his year, in May 1927, as Reserve Officer. On June 1, 1927 he entered, at Grasse, the service of the Etablissement Antoine Chiris, as research chemist.

He soon assimilated much of the technical traditions of this fine and long-standing industry, and in January 1931 became head of the research and analytical laboratories of the Etablissements Chiris, where he remained until the end of 1935. The experience he acquired at the side or with the assistance of the well-known chemists like Louis Glichitch, Madame Marcelle Igolen, Charles Muller, Maurice Brun, is illustrated by the various original contributions of his which appeared during this period of 17927 to 1935 in *Chimie et Industrie*, *Parfums de France*, and the *Comptes-rendus de l'Académie des Sciences*. This published amounted to some 32 separate groups of communications dealing mainly with the various oils of petitgrain and oils of zdravets, lemongrass, orris root, ylangylang, sweet orange, lemon, geranium, rose and neroli. Analytical methods or techniques which today are classical were elaborated: evaluation of citronellol by formulation, or irone in the oil of orris, of

alcohols by phthalisation, of peroxides by titanometry. Naves even at that period resorted to chromatography, to Raman spectrography, and to analysis involving molecular dispersion refractive index and rotatory power.

His experience in the art and chemistry of Perfumery raw materials was to assist him in writing, together with Gabriel Mazuyer and with the agreement of M. Georges Chiris, a book which soon became classical: "Les Parfums Naturels," published in Paris in 1939, and in an American translation by Edward Sagarin under the head of "Natural Perfume Materials," in New York in 1946.

At the end of 1937, he was approached by Alexandre Stanislas Pfau who since 1919 was in the service of Messrs. L. Givaudan and Co., S.A., in Geneva. Pfau, whose health was declining and who knew his days to be numbered, wanted to be assured of a collaborator for his last efforts and of a worthy successor. Yves-R. Naves, who came to Geneva in February 1938, was indeed to succeed him on August 18 of the same year.

Naves has never left Geneva since then except for short periods and war service, and today he is Director of Research to L. Givaudan and Co. He was, from 1944 to 1952, privat-docent at the University of Geneva, teaching the technology of the essential oils and of natural perfume materials and former students have not forgotten his tuition—and particularly the symposia between Yves-R. Naves and Rudolphe Cortesi, professor of phytotechnology at the University, on the essential oils.

After twenty years Dr. Naves' activity reveals itself in more than 250 communications to the *Comptes-rendus de l'Académie des Sciences*, the *Bulletin de la Société Chimique de France*, the *Helvetica Chimica Acta*, *Chimica*, *Soap*, *Perfumery and Cosmetics*, *Perfumery and Essential Oil Record*, *la Parfumerie Moderne*, the *Rivista Italiana Essenze*, *Profumi*, *Fette und Seifen*, *Manufacturing Chemist*; and in some score of patents. These papers deal with all the aspects of the industry and the chemistry of natural or synthetic raw materials for the perfumery industry.

All this activity has been acknowledged by noticeable nominations into various commissions, national and international, where Dr. Naves opinion is one of the highest considered. He is a member of the council of the *Société Chimique de France*. In 1952 he was awarded the Fritzsche Medal by the American Chemical Society.

He has been awarded various orders, among them being the Cross of Chevalier of the Legion of Honor for his services with the Navy.

After thirty years of uninterrupted work and fruitful studies, the collaborators who know all that has been accomplished beside the published works and remains confidential, who know the actual studies, the plans for the future, the friends who know Yves-Rene Naves carefulness, his tenacity, all wish that numerous years of fruitful work may follow.



The occasion of the visit of Her Majesty Queen Elizabeth to Paris this Spring was a truly gala occasion in the French capital. Roger & Gallet whose building is directly opposite the British Embassy, presented a gay facade flying the British and French colors. Specially designed awnings of the Queen's own Tartan plaid, caught up with white plumes, covered each of the Roger & Gallet front store windows. The Royal Seal was blown up over the main entrance, which was framed the height of two stories in brilliant red felt. Each of the seven display windows held one of the famous R&G animated displays, a series depicting the seven generations of British and French monarchs who have been served by Roger & Gallet.



Robert Felton Shoots Ace, Catches Marlin

Call it skill, talent, or just plain luck but Robert E. Felton, vice president of the Felton Chemical Co., has had a full share of this elusive attribute lately, beginning with a hole-in-one on the third hole at the T.G.A. Golf Tournament during the T.G.A. convention. According to a report from Adolf Dingfelder, Bob Felton was visiting the Los Angeles plant just three weeks later and, on a week-end of fishing, caught three Marlin. A rod with a three-ounce tip and a six-thread line was used to make this catch.

Lilly Dache Predicts Sexy Style Era

Scintillation in everything—and not in moderation—was the theme of Lilly Dache's Fall press presentation. The dazzling colors and polished fabrics of fall fashion were grouped to represent six different types of "Scintillation Lady," each inspired by one of the Lucien Lelong perfumes. According to Miss Dache, "The right perfume is as vital to a woman's self expression as the right dress. Dressing should begin with perfume, not end with it."

Lehn & Fink Products Corp. Erects New Warehouse

Harry A. Taylor Co., industrial realtors, has negotiated a long term lease between Lehn & Fink Products Corp. and Industrial Parks, Inc., for a new, one-story 55,000 sq. ft. warehouse.

Anatole Robbins Party at Laguna Festival

The home of Lowell Thomas Swanson, president of the board of directors of the Laguna Festival of Arts was the scene of a cocktail party sponsored by Anatole Robbins recently. The creators of the make-up used for the "living pictures" in the Pageant of the Masters played host to civic leaders and press.

Owens-Illinois Glass Co. Opens Atlanta Plant

The Southeast's largest glass container plant—and Georgia's first—has begun operation with production of the first glass jars and bottles in Owens-Illinois Glass Co.'s new Atlanta plant. The first molten glass flowed from the world's most modern glass-melting furnace in late July to make the first containers in the 619,000 square foot plant. A second furnace, now under construction, is scheduled to start production later this year.

Dow Chemical Co. Reports Record Sales

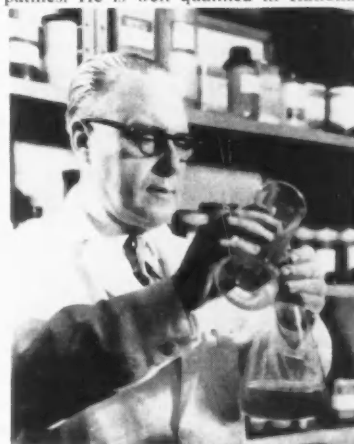
The Dow Chemical Co. has reported record sales of \$627,819,059 for its 1957 fiscal year which ended May 31. This represented a gain of eleven per cent over the previous year's sales of slightly more than \$565 million. Approximately \$7 million of income from other sources brought the total income to \$634,685,548.

Cosmetology Course At Mississippi University

Mississippi's first course in cosmetology was held at the University of Mississippi June 3-14.

Parentini Serves on Research Council

Joseph P. Parentini, technical director of Roure-Dupont, Inc., New York, N. Y., has been elected a member to serve on the staff of the Research Council of the Lincoln College of Surgeons and Naturopaths. He is well qualified in Rational



Joseph P. Parentini

Therapeutics, Naturopathy and Physiotherapy. Parentini is well known in the cosmetic industry for his creation of new products, some of which enjoy considerable success.



Mrs. Della E. Stover, newly selected American Mother of the Year in Europe, sniffs appreciatively at a jar of Pink Cleansing Cream, offered by Marie Copleston, Education Director for Tussy Cosmetiques. Mrs. Stover's trip to the Tussy showroom where she received a beauty treatment and consultation with Miss Copleston was part of her award, which included a tour of New York, a vacation trip to her home, Jefferson City, Mo., and over \$5,000 in prizes. Mother of four adopted children: an Eskimo boy; a full-blooded Indian boy from the Yukon reservation in Alaska and twin German girls, Mrs. Stover was chosen as an "outstanding service wife and mother" by popular vote of readers of the American Weekend, a family magazine published for Americans overseas in Europe and the United Kingdom. Wife of an Air Force Sergeant stationed abroad in Ramstein, Germany, Mrs. Stover holds a Masters Degree in Commercial Law and is a member of the Missouri Bar Association.

Market Report on Lavender

(From our Grasse, France, Correspondent)

It is still sometime before the next lavender and Lavandin distillation campaign, and we are giving below some information on the present situation of the market, and on the prospects as to what the 1957 crop will be.

As is known, the prices for these two essences started as of September 1956 at Frs. 15,000 per kilogram for lavender, and Frs. 1600 for the Lavandin. These were paid by all the buyers which covered almost all of their requirements as they took engagements with their customers and the market has been very firm and sustained up to February, since the purchases have been important and regular during this six-month period of time.

Transactions then stopped, and contrary to what was happening every year, there was no revival in March-April, as the customers preferred to wait for an improvement of the rates. So it was that the market, not receiving any further demand lost its firmness which gave way to a tendency to drop, in spite of the resistance of those distillers who decided not to accept purchasing offers at lower limits. However, it was necessary for the producers to face the facts, and offers of sale appeared on the market which were made either by distillers who, being in need of supplies to assure the spring work—purchases of agricultural equipment, seeds, fertilizers, or other things—

decided to sell all or part of their stock, or by distillers who, having lost all hope in the face of the crumbling of the rates, preferred to give in to limit their losses.

Prices thus were found to be brought back, little by little, to the present rate of Frs. 10,000 for lavender and Frs. 1,200 for the Lavandin, and seem now to be at a stop, as the market assumed a waiting position.

What will its evolution be during the weeks remaining before the crop? Opinions vary, and we ourselves are embarrassed to issue a prophecy that has some chance of being proved true. In our opinion, this evolution will depend on three factors:

- 1) The business requirements, still unknown. However, it is possible to presume that many important users that operated on their stocks from previous years and have bought little to maintain it are now willing to build them up again, since the prices are now more advantageous.
- 2) The importance of the quantity that will still be unsold at the time of the crop, and this still represents an appreciable tonnage.
- 3) The size of the crop; this latter seems to be very favorable from the point of view of vegetation, which conditions may be changed from the point of view of production through meteorological conditions at the time of the picking.

If there is no panic, if important orders do not arrive too fast, if the buyers show any wisdom, it seems possible

Gerberding, Schroder Visiting U.S.



Horst Gerberding (left) partner of Dragoco, Holzminden, Germany and Ulrich Schroder (right) financial expert of Dragoco Holzminden arrived at New York International Airport for a short visit in this country. They were welcomed by Dr. Henry Gribou (center) vice president of Dragoco in New York.

to admit that the present prices will be those that will be asked for the essences of the 1957 crop.

It is necessary to consider the fact that the interesting prices obtained by the growers led them to increase their production. Thus numerous important new plantations have been created almost everywhere. It is difficult to estimate the total acreage planted, and it is only possible to make approximations. The most recent figures known are those of 1953, which give a total of 12,700 hectares for the four Departments: Basses-Alpes, Vaucluse, Drôme, Hautes-Alpes in the order of their importance. The production of these four Departments is said to have amounted in 1954 to:

Essence of Lavender	70 tons
Essence of Lavandin	225 tons

Breck Breaks Ground For Plant Expansion

John H. Breck, Sr., chairman of the board of John H. Breck, Inc., recently turned over the first spadeful of earth symbolizing the start of his firm's \$200,000 expansion program at its West Springfield manufacturing plant.

The new facilities, when completed in August, will provide new shipping and receiving docks, greater warehousing area and expanded quarters for the Quality Control Laboratory.

Pfizer 6-Month Sales Up 13 Per Cent

Chas. Pfizer & Co., Inc., recently reported net sales of \$98,460,465 for the first six months, up 13 per cent over the \$87,194,132 in the same period last year.



Standard Aromatics Presents Perfume Blending Components

A new concept in the preparation of perfumes, designed to assist fragrance houses in blending new and original scents of their own, has been prepared by Standard Aromatics, Inc., and has been launched under the name, Symphony of Scents.

The Symphony of Scents consists of six perfume oils, each of which, accord-

ing to the manufacturer, is a finished fragrance in itself, yet so chosen and so blended that they can be united with complete harmony in any qualitative or quantitative combination without clash.

Because the keynote of the Symphony of Scents is harmony, the musical theme has been carried throughout the fragrances which have been named accordingly, the six perfumes being, Maestro, Keyboard, Timpani, Violoncello, Woodwinds, and Brass Choir.

First Meeting of the Essential Oil Assn. of India

The first Annual General Meeting of the Essential Oil Association of India was held at Kannauj under the Presidentship of Dr. D. R. Dhingra, Principal, Harcourt Butler Technological Institute, Kanpur and Jt. Director of Industries (E), Directorate of Industries, U.P., Kanpur.

The meeting was attended by about 35 members of the Association representing various interests of the industry and trade. The delegates from some well-known research institutes and laboratories also attended the meeting. Messages of goodwill were received from many distinguished persons including Sri Punjabrao Deshmukh, Union Food Minister, Government of India, New Delhi; Sri Chandra Bhanu Gupta, Minister for Planning, Health, Industries, Food and Civil Supplies, Government of U.P., Lucknow; Prof. M. S. Thacker, Director, Council of Scientific and Industrial Research, New Delhi; Sri K. N. Singh, Secretary, Industries Department, Government of U.P., Lucknow; Sir G. M. Modi, Director, Modi Industries, Modinagar; Prof. K. N. Kaul, Director, National Botanical Gardens, Lucknow and Sri Abdul Hameed, President, Lemongrass Oil Exporters Association, Alwaye, Cochin. The meeting was inaugurated by Sri P. A. Narielwala, Director, Tata Industries (Private) Ltd., Bombay and Chairman Essential Oils Research Committee under the Council of Scientific and Industrial Research, New Delhi.

Address of Welcome

A welcome address was presented by the members of the Perfumers Association of Kannauj to the members of the E.O.A. of India and especially Sri Narielwala. The importance of Kannauj in the perfumery industry was referred to therein since prehistoric times and also its present eminent place in India. It was further pointed out that the perfumery industry would be developed during the Second Five Year Plan under the able guidance of Sri Narielwala.

Inauguration

Sri P. A. Narielwala, while inaugurating the meeting, congratulated the members to have assembled to discuss the various measures to develop the essential oil industry in India. He recalled his visit to Kannauj about 16 years ago in the capacity of a member of the Exploratory Committee under the C.S.I.R. for making a survey of the essential oils and perfumery industry then and on the recommendations of that survey report, the Essential Oils Research Committee was formed by the Council. Sri Narielwala, while describing the growth of essential oil industry of India, said that it was in this part of the world i.e. India, Egypt and Persia that the historic evolution of the process of extraction of essential oils from natural raw materials had taken place. He said that there is considerable evidence to show that production and use of perfumes and aromatics had developed to a great extent in India in past. Sandal wood and its oil constituted an

article of barter between India and other Mediterranean countries centuries ago. The conquest of Egypt by Rome is attributed to the fact that the Romans coveted the perfumes which the Egyptians used to obtain from India. India came to be known for her high class perfumes and the fame of centres like Kannauj, Jaunpur and Ghazipur spread to many parts of the World. Indian spices and perfumes brought the Portuguese and other European nations to the shores of India in search of these highly prized commodities.

He said that inefficient organization, failure to note the changing times and incapability to keep pace with the scientific developments by the perfumers, were some of the reasons responsible for losing our hold on the World market, which is captured by the European countries in modern times. He further pointed out that French perfumers made it an art and French scientists helped the perfumers to create new and enchanting perfumes to meet the needs of the most fastidious tastes. Bulgaria and Turkey have gone in for the production of world's best rose oil. Italy and Sicily took the citrus seeds from India and are now foremost in the field of citrus oils. Patchouli leaves, which were once used for protecting the famous Kashmiri Shawls from moths, have gradually disappeared from India and we are importing them, now.

He said that India is extremely fortunate in having a host of raw materials in the form of grasses, flowers, leaves, roots etc. The major items in this field are oils of lemongrass, palmarosa, sandalwood, eucalyptus, khos etc. India has been in fact described as "the epitome of climates, seasons and soils" and is still one of the richest countries in aromatic wealth.

He remarked that C.S.I.R. has set aside a good deal of amount in the second five

year plan for the development of this industry in India. The E.O.R.C. has undertaken the work of modernizing the Indian Industry on scientific lines and it will place the results of the researches conducted under its agencies for the benefit of perfumers to enable them to develop the industry. The E.O.R.C. has done considerable spade work and now it proposes to produce such varieties of grasses, flowers, and plant materials which may yield a higher percentage of oils and give a better quality of aroma. The Committee has also proposed to open four regional research centres at Dehradun (Forest Research Institute); Kanpur (Harcourt Butler Technological Institute); Bangalore (Indian Institute of Science); and Poona (National Chemical Laboratory). In addition to above, cultivation work will be carried out at the Drug Research Laboratory Jammu and Kashmir and in Nil giris.

He urged the perfumers to take advantage of the facilities offered by the National Laboratories. The E.O.R.C. will be glad to give technical help to cottage and small scale workers wherever demanded. He advised the perfumers to go with the time and wished that the E.O.A. of India be of much help to industry.

Presidential Address

Dr. D. R. Dhingra welcoming the members to the first annual convention of the E.O.A.I. thanked Sri Narielwala for inaugurating the meeting and said that the proposal for the formation of this association was conceived and discussed at the Symposium on Essential Oils held at Dehradun in October 1955. An ad-hoc committee consisting of 10 members was formed to frame the rules and by-laws of the Association. The venue of the first meeting was fixed at Kannauj keeping in view its importance in perfumery industry as was rightly remarked by Sri Rajyapal of Uttar



Snapshot of Miss Franya Zibrosky, Colgate-Palmolive Co. taken outside a thirteenth century inn called "Bells of Peover" which was Gen. Patton's temporary headquarters outside Manchester, England, during the war. With Miss Zibrosky is L. Gardel, perfumer for Colgate-Palmolive International, Manchester.

Pradesh for Kannauj, "The City of Perfumes."

Dr. Dhingra also traced the history of Essential Oil industry in India and remarked that India still produces large quantities of essential oils, though she has lost her monopoly since Indian perfumers did not adopt the modern technique and equipment of production. While giving statistical figures of production of essential oils in India he urged that work should be done on cultivation of perfume bearing raw materials under varying conditions viz., climate, soil, artificial and natural manures etc. He emphasized that cultivation of lavender, bergamot, cloves, patchouli, eucalyptus etc. should be taken up on large scale. He said that much research work has been done at Forest Research Institute, Dehradun; Indian Institute of Science, Bangalore; National Chemical Laboratory, Poona, and Harcourt Butler Technological Institute, Kanpur. The Scientific Research Committee of Uttar Pradesh along with the Government of U.P. have taken interest in the subject. He referred to the work done at H.B.T.I. Kanpur and said that oils of Kewda, Champaca, Bela, Juhi, Marigold flowers and leaves, Maulsari and Kadamb have been prepared and their chemical properties and the chief chemical constituents present in some of them have been determined. The possibility of cultivation of mentha arvensis, mentha piperita, palmarosa, and lemongrass etc. has been studied in the State. Some work has been done on isolates from palmarosa and lemongrass oils and also on some perfumery esters and ethers.

He said that Government of U.P. is going to open six training cum demonstration centres located at Kannauj, Jaunpur, Hassayan (Dist. Aligarh), Ghazipur, Sikandarpur (Dist. Ballia) and Sikandra Rao, during the second five

year plan, where cultivation of important perfume bearing plants viz. rose, bela, juhi, hameli, peppermint etc. would be undertaken and the effects of various natural and artificial fertilizers would be studied. He remarked that a standardization laboratory be set up at Kannauj to examine the essential oils made by local perfumers. Lastly he thanked Sri Narielwala for his great interest in the association.

Honorary Secretary's Report

Sri G. N. Gupta, the Honorary Secretary, while submitting his report said that with the active cooperation of the members of the ad-hoc committee set up at Dehradun, rules and by-laws were framed and published in the form of a booklet. He informed that till then more than 50 members of different categories had been enrolled. He thanked Sri Harihar Nath Mehrotra, Partner M S Lala Banarsidass Khattri, Kannauj for becoming the first patron of the association. He announced that Sri Murlidhar Dubey, Proprietor, M S M.S. Sandalwood oil factory, Kannauj has also consented to become the patron of the association.

The honorary secretary proposed to publish a journal and pointed out that prizes and medals be awarded to authors of best papers to invite standard papers for the journal. In the end, he thanked the members of the Perfumers Association of Kannauj for arranging the lunch for members and to M S Mananlal Ramnarain for giving at-home and Sri J. N. Tandon and Sri J. N. Kapoor for making lodging and boarding arrangements for outside members.

Some research papers were read and discussed. A summary of the papers is enclosed herewith.

The honorary secretary also extended thanks to all those who worked with him to make the meeting a success.

VISOM, New Company in Cosmetic Field

Visom, Inc., a new company, has been established for the purpose of manufacturing and selling cosmetic preparations



to the beauty salons, according to Leonard J. Viola, president of the firm. Visom, Inc., has established offices and plant in Yonkers, N.Y. Production and sales plans call for the launching of a line that will be shown in the Fall at the beauty salon shows. This line will include permanent waving and neutralizing lotions, shampoos, rinses, and a group of products specifically worked out for "problem" hair.

OBITUARY

Harry A. Roth

Harry A. Roth, sales representative for Shulton, Inc., in Oklahoma, Arkansas and Texas, died suddenly on July 28th. Mr. Roth had represented Shulton in that area since January 1, 1951.

Mrs. Ida Belle Shelton

Mrs. Ida Belle Shelton, founder and sole owner of DuBelle Cosmetic Co. died recently after a year's illness. Mrs. Shelton organized her firm 35 years ago.

Princess Matchabelli

Princess Norina Matchabelli, 77, who with her husband, the late Prince George Matchabelli, founded the perfumery firm of Prince Matchabelli Inc. which is now a subsidiary of Vick Chemical Co., died late in June at a retreat dedicated to Meher Baba, spiritual leader of India. She was an actress of note and portrayed the part of the Madonna in "The Miracle" which was produced in 1912 and shown in every European Capital and in America.

Elliot A. Bowles

Elliott A. Bowles, president of the Whitehall Pharmacal Co. died in New York June 27 at the age of 43 years. He had been vice president of the Shering Corp. and later became president of Artra Cosmetics.



Examining some of the raw materials on display at The Fragrance Foundation's Perfume and Fragrance Seminar, are consumers and members of the trade who were present. The persons who attended were instructed on the uses of fragrance products by Miss Sherry D. Stone.

SPOTLIGHT

News...

The merger of the Dow Chemical Co., Midland, Mich. with the Dobeckmun Co., Cleveland, Ohio, manufacturers of flexible packaging materials, has been approved by the directors of both companies. Subject to ratification by stockholders August 30, the latter will then become a division of Dow.

Schieffelin & Co. the 176 year old wholesale drug house which manufactures the Almay line of cosmetics is erecting a Brooklyn plant. On its completion the wholesale drug division will operate from two locations but the other divisions of the company will continue to function from the Cooper Square headquarters in New York.

Microscopic analytical methods for product control in the food and drug industries will be considered at a symposium at the annual meeting of the Assn. of Official Agricultural Chemists in Washington, D. C. October 15.

The preparatory phase of the U. S. Pharmacopeia revision program has been completed. The list of admitted U.S.P. articles will be made public later this year.

Men prefer is the name of a new line of toiletries for men launched by Swank Inc. Attleboro, Mass., makers of jewelry for men, leather goods and accessories. The line includes shaving cream, a deodorant, after shave lotion, cologne and other preparations.

For misrepresenting its perfumes as French imports the Maxwell Distributing Co., Newark, N. J. has been ordered by the Federal Trade Commission to discontinue the practice and also from making fictitious claims concerning the prices of these products. The company used brand names such as "LaVie en Rose" and "Le Couturier" and statements that the fragrances were created in France and blended in the French tradition. It portrayed the tricolor of France to suggest French origin and used the address "Paris-New York." The examiner also prohibited claims that prices, in reality excessive and fictitious, were usual and customary.

She Traded Her Pigtales for a Toni, a phonograph recording, won fifth place in the Hit Parade in Birmingham, Ala. and is climbing on the list of best sellers. As part of a merchandising campaign backing the introduction of the lively record sung by Glen Reeves, the Toni Co. sent gift boxes with the records to leading disk jockeys throughout the country.

Jell-O Div. which could have been purchased in 1897 for \$35, which is now a division of General Foods Corp. has produced an estimated 8,250,000,000 packages of Jell-O since it was founded in 1897. It is now the world's biggest gelatin dessert operation. The company was founded by Ernest Woodward who began making Jell-O at his Genesee Pure Food Co. in LeRoy, N. Y. Sales were so slow that he offered to sell the gelatin business for \$35 but there were no takers. The product was recalled from the market and a year of research was spent in trying to improve the product. Then salesmen were sent out to market it. With advertising to support them sales began to grow and the business was sold to General Foods Corp. which now manufactures Jell-O in five plants.

Novocain is an age rejuvenator according to Dr. Anna Aslan, medical director of the Institute of Geriatrics, Bucharest, Roumania, who has done considerable research work. She claims also that it gives new color to the hair. Scientists feel that more evidence is needed as well as clinical data to support the broad claims. Dr. Aslan presented a paper on the treatment at the Congress of the International Association of Gerontology in Merano, Italy.

Turner Hall Corp. has acquired Rilling Dermetics Co. Turner Hall Corp. makes Eska Protein Wave, Hidden Support, Admiracion shampoos and Dressed. The Rilling line consists of a wide variety of products for the professional beauty field. Dermetics consists of a line of consumer cosmetics. Both will become divisions of Turner Hall.

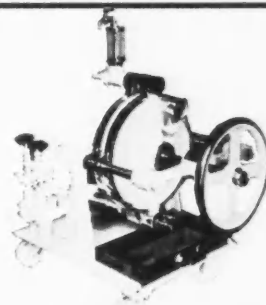
A shaving lotion for those with tender skin has been introduced by Yardley of London to retail at \$1.25. It is said to contain an emolient which soothes and helps to improve skin texture without imparting a stinging sensation or leaving a sticky film on the face.

The first fragrance seminar for consumers was conducted at the Military Park hotel, Newark, N. J. by the Fragrance Foundation July 24. All aspects of the use of fragrance were covered in the well arranged program under the direction of Miss Sherry Stone director of the Foundation.

The price of black molasses used to make ethyl alcohol has been cut in half by the Cuban Sugar Stabilization Institute. Over 60 million gallons of blackstrap have been sold to a U. S. company at 10 1/4 cents per gallon. The previous price was 20 cents.

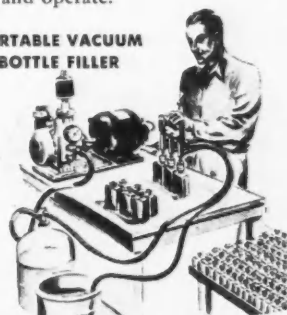


FILTERS AND BOTTLE FILLERS for the Perfumer

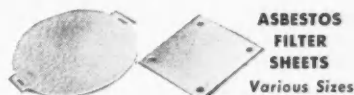


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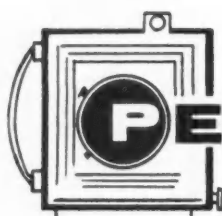
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PERSONALITIES

Stephen G. Capkovitz has been appointed manager of the perfume, flavor and aromatic chemicals division of S. B. Penick & Co. Mr. Capkovitz joined Penick in January of this year as a special



Stephen G. Capkovitz

technical representative. A graduate of New York University, he has always specialized in this field. Prior to joining Penick he was head of the perfumery division of the Colgate Palmolive Co.; chief chemist of three Vick Chemical Co. subsidiaries; and chief chemist of Yardley of London, Inc.

Also effective at once, Edwin G. Allison is appointed sales manager of the division and James Burgess, assistant sales manager. Penick recently purchased Dow Chemical Co.'s Jersey City aromatic chemicals compounding unit which is now being consolidated with the Penick operation.

Lloyd C. Mitchell, research chemist of the Food and Drug Administration, has been selected to receive the annual Harvey W. Wiley Award of the Assn. of Official Agricultural Chemists. Mr. Mitchell is the first winner of the award, which was established last year to honor the father of the original Pure Food and Drug Law.

T. Yagi, energetic vice president of the Picaso Cosmetic Laboratory, Kedscho-Nishinomiya, Japan, was a recent visitor to the United States. He flew from Paris to the United States and after visiting friends in the trade in New York left for Los Angeles, Calif. from which he departed for Japan. While in New York he spent much of his time with Thomas Shimizer, a Japanese graduate student in Columbia University. It was Mr. Yagi's first visit to this country in several years.

William Nelson of Kohnstamm & Co., Inc., has been appointed sales manager of its Western Division. He also continues as ass't secretary. Mr. Nelson started with Kohnstamm in 1922 as a



William Nelson

boy, working under the late Hugo Pulver, vice president and director of the company. In his 35 years of association with the trade, particularly in the Ohio, Indiana, Michigan, Tennessee territory as well as the Northwest and Rocky Mountain states, he has made a host of friends who will welcome the news of his official promotion.

Philip Libson, manager of the project development division of Max Factor and Co., will lecture for a course in Creative Packaging of Consumer Goods, which University of California Extension lists for fall enrollment.

Eric de Kolb, well known industrial designer, has left on his annual trip for Europe. He will visit France, Spain, Germany and Italy. While abroad Mr. de Kolb will be in quest of new ideas, and will return in early fall.

F. D. Perrone, vice president of Standard Aromatics, Inc., has just returned from a trip throughout the mid-western area of the United States, where he found a vigorous and courageous interest in new cosmetic products.

George M. Guttler and **Chester F. Bovard** have joined the chemical research staff of Chesbrough-Pond's Inc.

Dr. Leonard A. Scheele, former United States Surgeon General, now president of the Warner-Chilcott Laboratories, received the honorary degree of Doctor of Science at commencement exercises of St. John's University.

John A. Cawley has joined American Home Products Corp. as an assistant to the president, Walter F. Silbersack. Mr. Cawley for the last two years has been president of George W. Luft Co. For



John A. Cawley

the previous sixteen years he was with Miles Laboratories Inc., being vice president when he resigned in 1954.

James W. Newman has been elected treasurer of Lehn & Fink Products Corp. Assistant treasurer since 1938, a director since 1947 and secretary since 1955, Mr. Newman has been with the company since 1926.

William C. Bird has been elected chairman of the board of the Prophy-lactic Brush Co. He is a member of the board of directors of Warner-Lambert. Philip A. Singleton has been elected president of the company to succeed Mr. Bird.

Arnold L. van Ameringen, chairman of the board of van Ameringen-Haebler Inc., New York, has been elected a member of the board of governors of the Menninger Foundation, a non-profit psychiatric center.

Geoffrey Sladden has been made manager of Shulton (Great Britain). He is a graduate of Oxford University and served in the British army for six years.

Lilly Dache, president of General Beauty Products Corp. is en route to the Orient.

Joseph H. Brant, formerly director of waving research at the Toni Co. has been transferred to the Harris Research Laboratories, Washington, D.C., an independent subsidiary of the Gillette Co.

Paul Gregory has been appointed vice president in charge of field operations of Avon Products. Mr. Gregory joined



Paul Gregory

Avon's Kansas City office in 1934, was made division manager at the Pasadena office in 1939, and, in 1945 was transferred to the New York office as national district sales manager. Three years ago he became director of field operations.

Dr. Arthur Greenberg has joined Charles Antell Inc., Baltimore, Md. as director of marketing research.

Ward F. Parker has resigned as vice president and director of marketing of B. T. Babbitt Inc. to join the J. Walter Thompson Co.

Jesse H. Starkman, cosmetic chemist and assistant technical director of Van Dyk & Co., Inc., was elected a fellow



Jesse H. Starkman

of the American Institute of Chemists at the annual meeting. Mr. Starkman, who became affiliated with Van Dyk in 1952, is in charge of the cosmetic formulation and development division of the company.

George E. Wasey, chairman of the board of the Barbasol Co., Indianapolis, Ind. has been elected a trustee of the colleges of the Seneca: Hobart College, of which he is an alumnus and William Smith College, the coordinate college for women, both of which are located in Geneva, N. Y.

Riley Denny has been named vice president in charge of branch operations of Avon Products. Mr. Denny began his



Riley Denny

association with Avon in the Kansas City office in 1936. Transferred to the New York office in 1941, as assistant sales manager, he was appointed sales manager in 1943 and director of branch operations in 1955.

Dr. Henry Wing has been appointed chief of the laboratories of Chesebrough-Ponds, Inc. Clinton, Conn. laboratories.

J. D. M. De Kock has been given powers of procuration by the N. V. Chemische Fabriek "Naarden".



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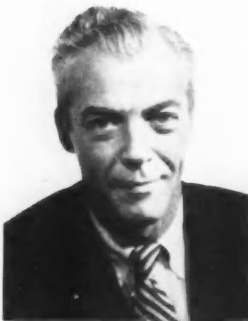
J. J. DeCarlo has been appointed to the newly created post of plant coordinator from his previous position as director of purchases of the Fluid Chemical



J. J. DeCarlo

Co. As plant coordinator, Mr. DeCarlo will have over-all supervision of production while coordinating and planning the development of Fluid's new contract packaging facilities. His chief responsibility will be to organize new aerosol filling lines to meet Fluid's heavy production schedule.

Edwin P. Hay has been appointed to the sales staff of Polak & Schwarz. Mr. Hay was formerly associated with General Aniline & Film Corp., handling



Edwin P. Hay

P.V.P. and related products. He will devote himself to the sale of perfume compounds, essential oils and aromatic chemicals.

Robert E. Hilbrant has been appointed director of marketing for the Toilet Articles division of Colgate-Palmolive Co. He has been associated with the company for 33 years. C. G. Grace is vice president in charge of the division.

Perry Zang, former manufacturer of Amorskin and formerly toilet goods buyer for Gimbels, New York, has joined R. H. Macy & Co. as head of a new Prescription department. Mr. Zang operated a drug store in White Plains which he later sold to a drug chain.

Leonard S. Brooks has resigned as general manager of P. R. Dreyer Inc.

Mr. Brooks, prominent in the essential oil industry for 25 years, has taken advantage of an opportunity to use his technical and administrative experience in an entirely new field of business, and is becoming associated with Bennett Industries, manufacturers of steel containers. After a short holiday, he will assume his new duties at the home office in Peotone, Illinois.

Frederick Wilson has been appointed assistant to the president of Bourjois, Inc., it was announced recently by Lewis F. Bonham, president of the firm.

John T. Brickner has just been appointed branch manager of the Dodge & Olcott, Inc., Los Angeles branch office at 908 South Olive St.

Charles H. Revson, founder and president of Revlon, Inc. is one of four members of the executive committee and also one of the directors of the Rye (N. Y.) United Fund Inc. Mr. Revson's estate is located on Forest Ave., Rye.

Samuel Rubin, president of Faberge Perfumes, and creator of the Samuel Rubin Foundation for philanthropic endeavor has been elected chairman of the Brandeis University Fellows, a 90-member group. Mr. Rubin was elected a fellow in 1951 and has been a leader in the Brandeis program in anthropology. In 1951 he created a chair in anthropology and in 1956 gave \$250,000 to expand research in anthropology and to launch the university's first field study in this area.

Richard D. Marzane Jr. has been appointed director of purchases for the Fluid Chemical Co., where he will have



Richard D. Marzane, Jr.

complete supervision of Fluid's expanding purchasing requirements, according to E. D. Bennett, president.

John A. Faber has joined Schimmel & Co., Inc., in the capacity of special assistant to the president, Gert Keller. Mr. Faber played an active part in the formation in 1953 of Schimmel Boehm Ltd., Schimmel's London affiliate. He joined that company at its inception as an officer, having formerly worked in the essential oil section of Fredk. Boehm,



John A. Faber

Ltd. This is not the first time Mr. Faber has visited these shores, as he worked with the Glidden Co. in Cleveland, Ohio in 1949-1951.

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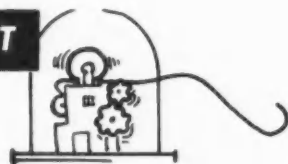
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MARKET REPORT



Flavoring Oils in Demand

Several flavoring oils, citric acid, and the tartrates were in good demand over the past month reflecting heavy retail sales of beverages, confections and a summer line of foodstuffs. Some houses stated that the volume of orders was unusually large attributing the turnover to sudden spells of real hot weather as well as the fact that the beverage season got off to a rather late start this year. Geranium oils displayed renewed

strength, but generally comparatively few price movements were noted in the market. While a note of optimism prevailed regarding August sales appearances of a shift in the general economy has served to cloud the outlook. It was not clear whether a letdown in production schedules in many lines was caused entirely by seasonal influences or by attempts to adjust supplies to a possible letdown in consumer buying.

PRICE CHANGES

Advances

	Current	Previous
Menthol		
Brazilian	\$6.10	\$5.85
Synthetic laevo	6.10	6.00
Oil Geranium		
Bourbon	17.50	17.35
Algerian	16.00	15.00
Corn oil, crude	0.14 ¹ / ₈	0.12 ³ / ₄
Acetone, tanks	0.08 ¹ / ₂	0.08
Cocoa butter, ton lots	0.75	0.64
Brucine sulfate, oz.	0.15	0.10

Declines

Orange oil, distilled*	\$0.70	\$0.80
Anethol, USP	1.40	1.65
Oil lavandin	2.75	2.85
Oil vetiver, Haitian	9.25	9.50
Oil sage, Dalmation	3.75	3.85
Copra, coast, ton	151.00	155.00
Peanut oil, crude, tanks	0.14 ¹ / ₄	0.15 ¹ / ₂

(Prices per pound unless otherwise specified)

*Exchange brand.

MENTHOL QUIET, FIRMER—

Prices on synthetic laevo and Brazilian menthols edged higher despite a generally quiet seasonal demand for both items. Spot quotations for the natural product from Brazil moved up from \$5.85 to \$6.10 per pound while synthetic laevo menthol rose 10 cents per pound to the basis of \$6.10. Major factor behind the firmer tone in the market was the improved demand for material in Brazil from India and other countries.

GERANIUM ADVANCE EXTENDED—

The upward trend in geranium oil prices was extended over the past month in the face of a restricted demand here. Local houses moved selling prices upward on the basis of rising replacement costs in the Island of Reunion as well as in Algeria. The rising trend in replacement costs was attributed to reports to the effect that Russia recently purchased a quantity of oil equal to about a third of the crop. Purchases for the account of domestic soap makers had been rather

substantial in May and June. Consequently trade over the past month was generally quiet.

LIME OIL FIRM AND ACTIVE—

Sharing in the seasonal activity in the general group of citrus oils, the strength in lime oil was supported by late receipts of new crop oil, and reports to the effect that it will be another thirty days before contracts will be completed. Very little if any West Indian oil will come into this market and collection of the fresh fruit in Mexico got off to a late start thus delaying pressing operations.

ANETHOL CUT—

A reduction in technical anethol was immediately followed by similar price adjustments in USP material. The latter article dropped 25 cents per pound to the basis of \$1.40 to \$1.50 according to quantity. Loss of export orders was the major reason behind the decline. China has been offering more anise oil in the

European market thus lessening the pressure on demands for anethol made in the United States.

ROSEWOOD EASES—

Peruvian rosewood oil turned easier for shipment. Trade observers attributed the weakened position to an absence of orders. Shipping prices dropped by 10 cents per pound. The softness in the primary center threatens to be reflected in the local market.

GUM BENZOIN SCARCE—

Siam benzoine gum continues in a tight supply position. Quotations rose to \$6 to \$7 per pound but were largely nominal in the absence of firm offers. While demand for gum arabic is not pressing, trade observers are inclined to be rather bullish regarding the outlook.

CROP REPORTS EASE LAVENDER—

A softer tone has developed in lavender oil on reports of a good crop this year. There was a tendency on the part of some local holders to shade spot prices and it is quite possible general losses will be recorded in spot prices over the final quarter of the year if the early crop reports prove correct. Only a moderate demand for lavender was noted over the past month with both buyers and sellers being inclined to proceed with a degree of caution.

GLYCERIN ARRIVALS GAIN—

An increasing flow of imported glycerin into the country has started with the arrival of over 200 tons from Japan. Based on the amount of tonnage purchased earlier this year and continued good purchases in July a good tonnage is expected to come into the market in the months ahead. Refiners, according to reports have been seeking additional lots of natural crude glycerin from virtually all parts of the world despite a generally long supply position here. It would appear, based on the vast amount of natural glycerine tonnage purchased abroad, that refiners of natural glycerin are determined to maintain a hold on a good portion of the market despite increasing supplies of synthetic material. There was a jump in stocks of over 3 million pounds in April and at the end of May they showed an increase of about 386,000 pounds reaching the highest level in several years, or 71,560,000 pounds.

SPEARMINT ACREAGE OFF—

The area planted to spearmint this year has been estimated at 14,000 acres in three producing States or five percent below last year's acreage and 15 percent below a ten year average. A rather substantial reduction in acreage has been reported for Michigan. Area under peppermint this year is officially estimated at 49,100 acres, the highest of record. This compares with 46,300 acres in 1956, and an average of 42,100 acres over a ten year period.

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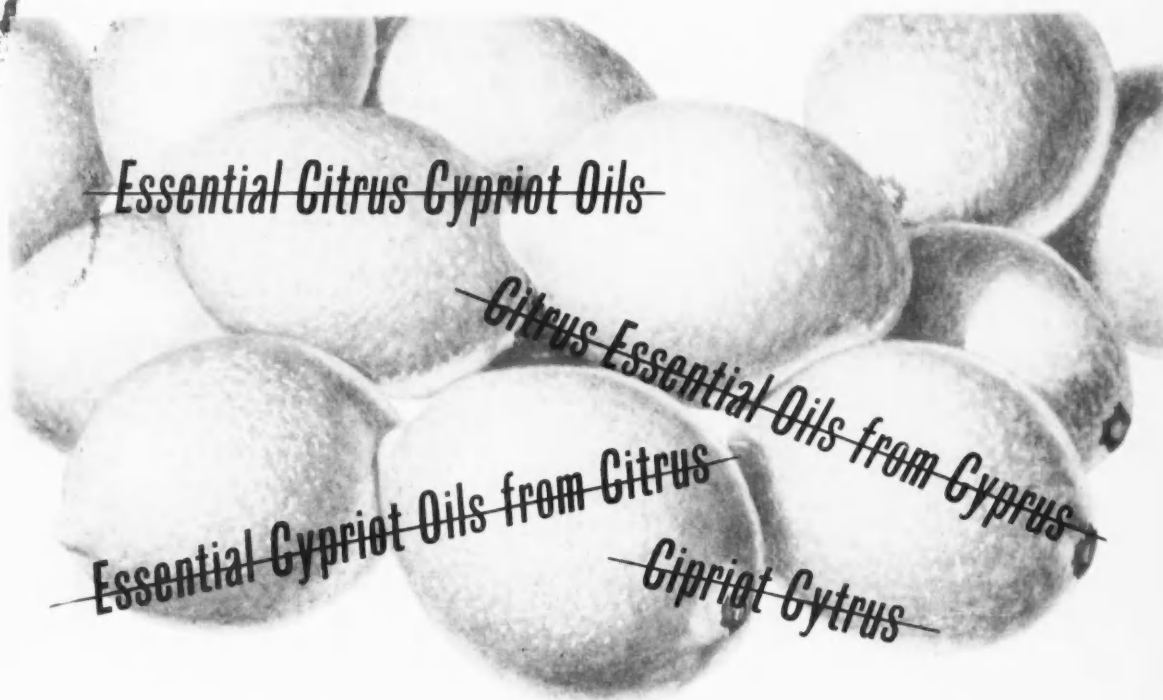
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CYTRUS FROM CIPRUS?

YOU WILL AGREE that worthwhile citrus oils must retain their delicate original flavour, and must be absolutely pure. Lanitis produce such oils in Cyprus. The 1957 supply of Lanitis oils is of superb quality. If you want samples we will send them, proudly send them, because they are derived from the fruit by the *very latest methods*. These entail the minimum contact of oil with water during the process of oil extraction. No wonder Lanitis oils are comparable with oils produced anywhere else in the world. Write to:

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